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MICROPANYPTILA FURCATA SUTTON.

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No. 2.

A NEW SWIFT FROM VENEZUELA.

BY GEORGE MIKSCH SUTTON.

(Plate VI)

WHILE provisionally identifying a collection of birds made during the summer of 1922 by Mr. M. A. Carriker, Jr., in Venezuela, I came upon two specimens of a Swift which was obviously undescribed, and which I could not satisfactorily place even in a genus. After making drawings of the male and female I sent the specimens to Dr. C. E. Hellmayr of the Field Museum of Natural History, Chicago, who confirmed my belief that they belonged to an undescribed genus and species. At the suggestion of Mr. W. E. Clyde Todd of the Carnegie Museum, Pittsburgh, I present the following description of this form.

***Micropanyptila*, genus novum.**

Superficially similar to *Reinarda* Hartert, but toes entirely free of feathers and the central rectrices rounded, not pointed. Similar to *Tachornis* Gosse, but tail deeply furcate, like *Reinarda*, and general color pattern differing considerably, there being but little tendency toward ruptive markings. Differs from *Panyptila* Cabanis, in having entirely naked toes which are arranged in pairs more or less as in *Tachornis*. Proportions of wing and tail about as in *Reinarda*, and texture of plumage distinctly that of *Reinarda*, not of *Panyptila*. Type, *Micropanyptila furcata*, sp. nov.

***Micropanyptila furcata*, species nova.**

Char. Specif. General appearance similar to that of *Reinarda squamata* Cassin, but considerably smaller in size, and plumage of upper parts

entirely lacking the light margins which give the head and back of that species the characteristically squamate effect. Outer primary a little shorter than adjacent one, and much attenuated at tip; proximal secondaries considerably longer than distal ones.

Description. Type, No. 90887, Collection Carnegie Museum, adult male; Guachi, Zulia, Venezuela, August 25, 1922; M. A. Carriker, Jr.

Above blackish brown, with dull greenish-bronze reflections noticeable on back, wings and tail; bases of the feathers of the head and back lighter brown, giving a slightly mottled appearance in the region of the nape and upper back; primaries darker than back with dull violet and blue as well as greenish reflections; secondaries sharply but very narrowly tipped with grayish white, the two proximals and their greater coverts being so widely margined as to give the appearance of a streak in the folded wing; loreal region whitish, suffused with brown as a result of the dark tips of some of the feathers; throat and breast grayish white, mottled, as a result of the showing through of the darker bases of the feathers, with dull brown, and of a slightly silken appearance; belly dull white; sides blackish brown, some of the feathers irregularly margined and tipped with whitish; tail, above, chaetura black glossed with green; underneath, dull brown with a lighter area along the shaft; all rectrices with concealed white bases which are of greatest extent in the two outermost pairs; innermost rectrices somewhat rounded at tip, outer rectrices sharply attenuated, as in *Reinarda squamata*; tarsus imperfectly feathered down to toes, plumage of tarsus blackish brown; "bill black; feet black [dull brownish in skins]; iris brown." Wing, 90 mm.; tail, 53, depth of fork, 26.5; bill, 3.75; tarsus, 5.5.

Female: similar to male, but a little duller in appearance, with brown of back and sides of head a little lighter in shade, margins of proxima, secondaries and greater coverts a little more pronounced, and basal white portions of rectrices a little less extensive. Wing, 91 mm.; tail 55, depth of fork, 27; bill, 4.25; tarsus, 5.5.

Remarks.—The slightly greater measurements of the female specimen may be the result of purely individual variation. This specimen is in changing plumage, the two proximal primaries being new and considerably darker and richer in appearance than the others. One of the outer rectrices is not yet of full length.

Unfortunately the species is represented by only a single pair of birds, which were taken at Guachi, Zulia, Venezuela, the only range for the form now known.

*Pennsylvania Game Commission,
Harrisburg, Pa.*

FOOT DISEASE OF CHIPPING SPARROW (*SPIZELLA PASSERINA*)¹.

¹Contribution No. 12, of the Baldwin Bird Research Laboratory.

BY T. E. MUSSELMAN.

(Plate VII)

IN 1923 I accepted the invitation of Mr. S. Prentiss Baldwin, to operate the trapping station at Inwood Plantation, Thomasville, Georgia, and during the six weeks there, in February and March, I handled from the traps more than 4000 birds, the greater proportion of them being Chipping Sparrows.¹ As I glanced through the records of previous years at the station I was interested to see many entries like the following: "Claw off, middle toe, left foot."—"Claw off middle and hind toe, right foot"—"Right foot diseased"—"Entire first toe gone off left foot," and in Mr. Baldwin's report for that station for 1921² under "diseased feet of Chipping Sparrows"—"about the same number, nearly ten per cent of Chipping Sparrows were found this year with diseased claws." "It is now evident that by making careful note of the condition of each toe, on a diseased bird, every time it is taken, it will soon be possible to know something of how rapidly the disease changes or spreads, and to what degree the claws may recover."

The next year 1922, Mr. L. R. Talbot operated this trapping station and noted in his report³ "That the disease is not just a claw disease, but effects the whole foot"; "that more than the usual percentage of Chipping Sparrows had diseased feet;—71 out of 287, new and returns, or nearly twenty-five percent"; and Mr. Talbot emphasized: "It should be carefully noted that these injuries are not in any way due to trapping or banding the birds."

Consequently upon taking charge of the station in 1923 and after consultation with Mr. Baldwin, I decided to undertake some study of this diseased condition.

¹ Auk, Vol. 40, No. 3, pp. 334-350—July 1923.

² Auk, Vol. 39, No. 2, April 1922.

³ Auk, Vol. 39, No. 3, July 1922—Page 345.

I secured a note book on each page of which I placed a stencilled copy of a Chipping Sparrow's Foot. Whenever I captured a bird showing the least evidence of the disease, I placed the band number of the bird in question above one of these pictures and from day to day as the bird repeated in the traps, I recorded the development of the disease using different colored inks and dating each new tracing.

During that six weeks I banded 519 new Chipping Sparrows, and handled 44 return birds of previous seasons, making a total of 563 individuals; and as these birds repeated more than three thousand times, this gave me an opportunity to study the disease from day to day.

A careful survey of this season's record showed that instead of 10 per cent of the birds being affected as suggested by Mr. Baldwin, in 1921, or 25 per cent as given by Mr. Talbot, in 1922, that 42 per cent of all Chipping Sparrows captured during my stay in 1923 were actually suffering from or had suffered previously from this disease.

Dr. John B. May was the 1924 operator at Thomasville.¹ He says; "Not only were 'Chipping Sparrows' very scarce, but almost none showed any signs of active 'foot' disease. Many birds had one or two toes or even an entire foot missing but they were old, healed cases, and I was unable to send any fresh ones to you or to the Biological Survey at Washington for pathological examination."

Mr. Herbert L. Stoddard, in charge of the Quail investigation south of Thomasville, at Beatchon, Georgia, has likewise captured and banded many Chipping and Field Sparrows. In 1926, at my request, he attempted to capture a number of infected birds to be used in a pathological study of this disease. However, a letter received from him notified me that during 1926, the prevalence of the trouble was far less than in 1925 and that he really had difficulty in securing specimens which were sufficiently diseased to give us the best tests.

A comparison of these reports indicate that the disease is variable, being much more prevalent some years than others.

Believing that weather conditions might be a factor in stimulat-

¹ Auk, Vol. 41, No. 3, July 1924.

ing the activity of the disease, I obtained from the Weather Bureau, Department of Agriculture, Washington, the statistics on temperature and precipitation at Thomasville, Georgia, for the years 1921, 1922, 1923, 1924, 1925. The temperatures were more or less uniform, but the following comparison of disease and precipitation is suggestive, although no definite conclusion can be drawn from such limited data:

Precipitation during March. covering the principal migration of Sparrows through Thomasville.	The month	Yearly percentage of diseased birds.
Year		
1921	3.31	10%
1922	4.12	25%
1923	5.23	42%
1924	2.15	Birds reported scarce— little disease
1925	.69	No numerical data— practically no disease.

It is noticeable in this chart that the years in which the disease was most prevalent, were likewise years of most abundant precipitation.

In order to determine the general distribution of the disease, I wrote to many banding stations at various points throughout the country. At the University of Alabama, about one hundred miles west and one hundred twenty-five miles north of Thomasville, they had captured one hundred and forty-one Chipping Sparrows, but none of these had apparently been host to this disease. Mrs. H. C. Miller at Racine, Wisconsin, reported no evidence of such a disease. Other replies from the country in general showed an absence of the disease at other banding stations, except through the New England States where Dr. Alfred O. Gross has occasionally discovered afflicted birds. In my own experience at Quincy, Illinois, I have never captured a bird with this trouble. Only Mr. W. B. Tabor at Kansas, Illinois, reported some sort of foot infection among the Mourning Doves he was banding. This suggested that the disease at Thomasville was probably one of local distribution.

My next problem was to determine whether the trouble was bacteriological or systemic in nature, or due to some external

source. My first thought was that perhaps the birds might have fed in the yards of a commercial fertilizing plant and that their feet had been burned by some caustic material. However, treatment for burns proved the fallacy of this hypothesis. In order to determine whether the trouble was infectious, I captured a Chipping Sparrow and pricked its middle toe with a needle. I then smeared blood from the blood sac of an infected bird over the tiny wound and, after making proper records, released the bird. Almost daily I caught this Chipping Sparrow. It was ten days before I noticed any unusual coloring on the inoculated toe. Four days later this affected district showed unmistakable signs of distention, and by the 18th day the epithelium was so greatly proliferated that a blood sac was formed the size of a pea. It was so cumbersome that the bird could progress only with difficulty.

On March 22, 1925, at my request, Mr. Stoddard tried a similar experiment at the Beachton, Georgia, station. He confined two Field Sparrows in a roomy box. One had a very bad case of foot disease while the feet of the other were normal. The scab from the badly infected foot was pulled off which caused it to bleed profusely. The feet of the other bird were just slightly pricked in a similar spot. A drop of blood from the sore foot was then washed over these spots. Examined April 5, the spots were red and just slightly enlarged but not sore. They were again examined April 12, and one foot had a great and very sore enlargement ready to bleed at the slightest provocation. Up to May 1, it had not changed in size or character except to harden somewhat. A very small spot appeared on the other foot between the dates April 12 and April 19, but did not develop further.

Two other pairs with which he experimented, escaped before any developments were noted. One Field Sparrow, with a small spot on a toe was confined with the others in late March. As late as August 3, 1925, it was in good health except that in one spot it had a sore the width of a dime completely locking two of the toes together, making the foot useless and handicapping the bird greatly. I attribute the length of time during which the scab clung, to the fact that the bird being in captivity did not get the infected area soaked with water. On every bird that I watched,

the scab clung until a drenching rain—then followed the loss of scab and, in fact, the entire infected area.

Mr. Stoddard found Chipping Sparrows very delicate and prone to die in captivity, while the Field Sparrow was hardy and seemed to keep in perfect condition with very little care, making it an ideal cage bird upon which to experiment.

In order to make permanent observations, I had many pictures taken with a magnifying camera. I was fortunate in selecting as one of my principal studies a bird which not only lost every toe on its right foot, but which likewise contracted the disease on its tarsus. Pictures show the progress of the disease and I present these to show the extreme malignancy of the infection.

CHIPPING SPARROW NO. 37,127—LATER NO. 37,304.

On February 23, 1923, I captured Chipping Sparrow number 37,127 in trap C, making the notation; "Right middle toe, infected."

It was captured again on February 25. The toe had swollen badly, and was about the size of a large pea, and the tarsus also showed a slight infection. I sterilized a needle with heat and alcohol, and punctured the large sac which had formed. Six drops of blood were pressed out, and a weak solution of iodine applied to the infected parts. Likewise the diseased condition of the tarsus was treated.

Normally, this disease limits itself in its progress to the feet of Chipping Sparrows, but this bird seemed to be unusually susceptible to its ravages as the following pictures will show. The bird was captured again March 2, 3, 5, 6, 7, and on the 8th the following notation was made:—"Right heel badly infected, middle nail gone, will soon lose 2-thirds of middle toe." The band was removed from the infected leg, and a new band No. 37,304 was placed on the opposite leg. (Pl. VII upper photo, fig. 4)

March 14, I have the following notations: "Pictures taken, right tarsus badly swollen, infection undoubtedly spread from the toe to the tarsus, middle toe has rotted off, heel nail gone, right heel infected." (ibid fig. 3)

March 20, my notation is: "Third nail and part of toe gone." (ibid. fig. 2)

On the 21st I removed the scab from tarsus, the iodine treatment having delayed the disease at this point. The last toe had become infected near the nail. The bird was captured again on the 22d. On the 25th the tarsus was completely healed. The bird was captured again on the 27th. On the 29th is the following notation: "Black scab on first toe very large and hard." During the night a heavy rain occurred, and on the 30th I captured the bird again, making this notation: "Rain soaked off scab and took part of the first toe with it." (ibid. fig. 1.)

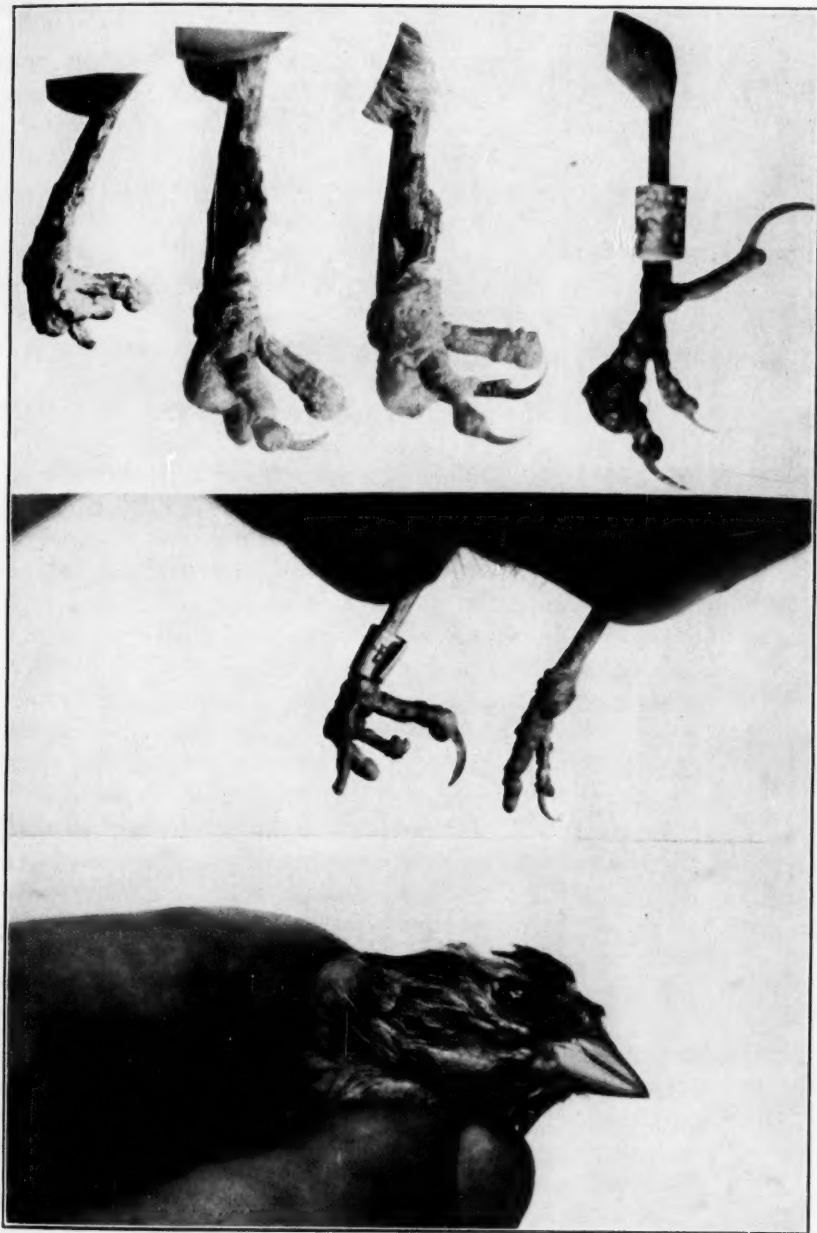
Thus in the course of one month's time this Chipping Sparrow had lost the entire complement of toes on its right foot; yet it showed little inconvenience because of the loss.

The following picture (Pl. VII. middle photo.) shows another bird which was banded in 1922 at which time its feet were deformed as seen in the picture. Yet in 1923 this bird fed with the flocks of Chippies and seemed very little inconvenienced by the affliction. The fact that it had lived for at least a year after the disease had run its course, indicates that it had met the dangers of migration and nesting equally well with those other birds about it which were not so handicapped.

The experiments convinced me at once that the disease was bacteriological in nature. As I had no microscope at Thomasville with which to make a histological study of the lesions, I communicated with Dr. E. E. Tyzzer, Department of Comparative Pathological, Harvard Medical School, Boston, Massachusetts, who, I had been informed, was very much interested in the diseases of birds. Upon furnishing him general information he suggested that the disease sounded very much like bird-pox and kindly offered to identify the disease if live birds were sent to him.

"This bird-pox is almost identical with the diphtheria and pox which afflicts domestic fowls, and to which Pheasants, Quail, and other wild birds are known to be susceptible" (Diseases of Domestic Birds, by Ward & Gallagher.)

In October 1925, I received a letter from a Mr. Murbach of Vermont, who had captured a Chipping Sparrow actively infected with a foot disease. His request for an identification sent to the Biological Survey at Washington was forwarded to me. I requested him to send the bird directly to Boston. Although it was



UPPER. RAPID PROGRESS OF FOOT DISEASE IN CHIPPING SPARROW, No. 37304
MARCH 30, 20, 14, 8.

MIDDLE. FEET OF A BIRD THAT HAD LIVED MORE THAN A YEAR WITH DEFORMED
FEET DUE TO DISEASE.

LOWER. BIRD-POX AFFECTING BASE OF BILL.



2-14-19

in a poor state of preservation upon its arrival, the slide of the disease mass from the foot, showed the trouble unquestionably to be bird-pox. It was the only time that I had known of the existence of this disease outside of the Thomasville neighborhood, and it was probably a specimen which passed through the district of infection on its migration northward. Of course, I was still uncertain that the Vermont specimen had a disease identical with that of the Georgia birds. Descriptions seemed the same so I requested Mr. Stoddard to send live birds with the disease in the primary stage to Dr. Tyzzer, also to the Pathological Division of the Biological Survey at Washington, as well as to me at Quincy, Illinois, for microscopic examination.

Of the two birds sent to Washington, one was dead and the other had already passed the bleeding stage and was in the black scab stage. An effort to transmit the disease to Canary birds was unsuccessful.

Several specimens were forwarded to Dr. Henry Ward at Urbana, Illinois. Laboratory tests in the Biological Department of the University of Illinois in an effort to inoculate live birds from the black scabs taken from diseased birds were likewise unsuccessful. In my own work I could get only negative reactions when experimenting with scabs. These three unsuccessful efforts led me to believe that the germ is infectious only during the bleeding period of the disease. In pox afflicted Domestic Chickens, however, "The scabs retain the virus of the disease and even after a period of five years may reproduce typical lesions."—(Ward and Gallagher.)

I placed blood from a bleeding lesion under my microscope and found the bacteria too small to isolate, yet the life cycle of the disease with the characteristic lesions and scabby warts was truly typical of bird-pox.

The two birds with blood sacs and the typical warty scabs which were sent to Boston from Thomasville arrived in fair condition. Upon a histological examination Dr. Tyzzer again diagnosed the disease as bird-pox.

The prevalence of bird-pox in birds arriving at Thomasville probably is due to the fact that in no part of the country do Chipping Sparrows gather in such tremendous flocks as they do

south of there. The Chipping Sparrow is particularly susceptible to the infection, while the hardier Field Sparrow is not so easily inoculated. When a hundred or more birds gather in a sandy spot, only a few feet in diameter (I caught 51 birds at one fall of a drop trap 4' x 4') the presence of several birds with blood sacs spreading their germ-filled contents on the sand, would very quickly inoculate numbers of their companions whose feet are probably scratched or scarified from weeks of feeding on the sand, the infection undoubtedly occurring through the slightest lesion in the skin.

The following chart from the records of the year 1922 previous to my work at Thomasville is interesting:

Birds with no trace of disease.....	216
Birds showing former infection now inactive.....	28
Birds with active disease at the time of first catching....	40
Birds in which the disease developed at Thomasville....	3

A total of 25 percent show evidence of having been infected. A similar chart for 1923 is interesting:

Birds with no trace of disease.....	322
Birds showing former infection now inactive.....	110 or 19%
Birds with active disease at time of catching.....	117 or 20%
Birds in which the disease developed at Thomasville....	14 or 2+%

The above chart suggests that the inception of the disease was probably somewhere south of Thomasville, as few birds which arrived in Thomasville with normal feet subsequently showed signs of its development.

On March 13, 1922, Chipping Sparrow No. 46,868 was caught. Comment: "Right foot middle toe swollen, claw coming out." This toe later disappeared and the foot healed. It was captured a year later on March 6, 1923, when the first toe, right foot, was swollen with characteristic bird-pox warts. This shows that the disease sometimes recurs in birds from year to year.

The trouble is not restricted to the feet and tarsus, however. About every one hundredth bird shows the infection about the head, particularly at the base of the bill as shown in Plate VII lower photo.

I could find no evidence of any sluffing of flesh or bill in several

such birds, but the characteristic pox wart was prominent at the base of the lower mandible.

Although these birds are probably inconvenienced by the incursion of the disease yet its course generally is quickly run and the bird soon recovers from the effect. Only in one case do I have record of its proving fatal.

Likewise Mr. Stoddard caught Chipping Sparrow No. 20,601-A, on February 27, 1925. Noting, "nail off rear toe left foot, otherwise normal."

"Return February 10, 1926, O. K."

"Return April 16, 1926. "In terrible condition, rear toes of both feet rotten with foot disease and sticking fast to breast feathers so tightly that bird could not hop. Both dried fast. Bird picked up dead next day, whole tarsi also terribly diseased."

Relative to the proper name for this disease, I again quote Dr. E. E. Tyzzer of Harvard University in a letter to Mr. Baldwin: "I think that 'bird-pox' is the only appropriate name for the disease in question affecting wild and domestic birds. It is sometimes called Contagious Epithelioma of birds, but while it is definitely contagious, the Epithelioma is more or less of a misnomer.

"All that is known about the causative organism is that it is so minute that it is not visible under ordinary high magnification, and will pass through the porcelain filter. It has never been cultivated and like the causative agents of smallpox, vaccina, and other similar diseases, it is spoken of as a 'virus.' The organism not being recognizable nor culturable, it has never been given any specific name."

Remedies: A harmless and efficient cure is Mercurochrome in a four per cent solution. This liquid may be painted on with a small brush or bit of cotton, and is equally good not only to cure infection on birds from the traps, but also for use on animals or the bird bander himself to prevent infection in minor wounds. Mild cases of pox on trapped birds have been cured by one application, though in more serious cases where the birds have been coming to traps regularly we have made several applications about two days apart.

Another harmless remedy in ointment form is made up of Liquor

Carbonis Detergens one dram, worked into Unguenteum Boracie Acid one ounce. Other efficient remedies are Mercury Bichloride or Silver Nitrate but as these are much more dangerous drugs they are best used only by those who are experienced in their use.

SUMMARY

Histological examination seems to prove the disease to be bird-pox: Careful study of several individuals shows that the disease is infectious during the bleeding period; that it can be inoculated from one bird to another; that the period of incubation is about ten days; that the enlargement of blood sac is at its height from the fifteenth to the eighteenth day; that the cracking and bleeding extend over a period of three days to a week at which time a scab forms; that with wild birds this scab hangs normally for several days but cases have been recorded in captive birds when the scab hung for several months; that the scabs are typical warts as found in bird-pox on domestic fowls; that in severe cases the lesions are so deeply seated that upon the dropping of the scab, the nail or toe is removed; that the scab is lost generally after a period of rainfall; that in many cases the entire disease cycle is complete within a month; that its distribution has been most noticeable in the Thomasville area and along the probable northern migratory course of these birds into the New England states where numerous afflicted birds have been reported; that the majority of the diseased birds are infected before arriving in Thomasville; that the disease is variable from year to year; that it seems to be most active during the months of February and March; that this disease generally does not affect the health of the bird; that the disease seems to be limited in its activities to the feet except in rare cases; that a bird which has suffered from the disease one year is not immune, but may be re-infected. (Chipping Sparrows No. 46,868 and No. 20601A.) That normally, although deformed, the bird recovers its health, but occasionally the disease proves fatal. That bird-pox seems more active during years of abundant precipitation than on years characterized by a little rain; that the infection of birds is in no way associated with bird banding; that the working out of the life cycle of the disease was made possible by the regular attendance at the traps and the accurate registry of each infected

bird by means of the numbered bands issued by the U. S. Biological Survey.

In conclusion I wish to extend my appreciation to Dr. E. E. Tyzzer of Harvard University, for his positive identification of the disease as bird-pox; to Mr. Herbert L. Stoddard of Beachton, Georgia; to Dr. John B. May; to Mrs. H. C. Miller of Racine, Wisconsin; to Dr. Henry Ward of Urbana, Illinois; and to Mr. S. Prentiss Baldwin of Cleveland, Ohio, for their untiring efforts to secure data, diseased birds for identification, and the reading and publication of manuscript pertaining to the experiment. Without their help, I could scarcely have carried on my investigation because of my isolation from the seat of disease activity.

Quincy, Illinois.

A PLEA FOR THE CONTINUATION OF ELLIOTT COUES'
ORNITHOLOGICAL BIBLIOGRAPHY.

BY CASEY A. WOOD.

No one can consult any of the Instalments of Coues' Bibliography without a mental doffing of the hat to a truly great man. The years of patient drudgery involved in that tremendous undertaking seem to dissolve in the amazement excited by the universal exhibit of the author-compiler's scholarship and erudition. Had Coues lived and if conditions had been favorable, he would, doubtless have carried to completion his ambitious scheme of a "Universal Bibliography of Ornithology." In this connection one is reminded that, as everybody knows, Coues was under considerable obligation to his friend Professor Alfred Newton, of Cambridge, England, for assistance, advice and encouragement in the preparation of his Bibliography. One of the treasures of the E. S. W. Library of Ornithology in McGill University is an autographed copy from Newton to Dr. Elliot Coues, "with the compiler's kind regards," in 1872, of "Extracts from the Record of Zoological Literature, Vols. I-VI., containing the portions relating to Aves from 1864 to 1869." This compilation proved of great help to Coues in assembling data for his great work; and the copy in question is full of his marginal notes and bracketed paragraphs indicating the transference of numerous references whose verbiage one may readily recognize in the pages of the Instalments. There is ample evidence that when Coues decided he would be unable to finish the work so happily and successfully begun he did his best to engage the activities of others to that end. I submit the account of one of these efforts,—that unfortunately ended in failure—in the form of a letter that came into my possession with a presentation by the author of the Instalments "to his friend W. Ruskin Butterfield." This communication deals with an arrangement two years before his death, by Coues with Ruskin Butterfield, to proceed with and complete the publication of the Bibliography, so far as it concerned British birds. For this undertaking, Coues offers every assistance in his power, including

the use of his collection of unpublished notes. Following is the letter:—

1726 N Street,
Washington, D. C. Dec. 15, 1897.

DEAR MR. RUSKIN-BUTTERFIELD:

I am glad to learn by yours of November 20th. that the pkge. reached you safely and its contents were found as described in the receipt you have signed.

I appreciate your kind expressions. If you feel under any obligation to me the debt can best be discharged by making the best use of the materials; and I shall be amply repaid by the successful issue of the arrangement now subsisting between us. *Perge modo!* I have given you five years, but suppose that it is a wide margin, and shall hope to see results in a year or two.

You seem to be setting the machinery in motion already, and I hope it will work smoothly. I would suggest that as my printed bibliog. is so large a basis of your work, you begin with that, cutting and pasting every little title on your uniform cards, arranged chronologically, alphabetized by authors under each year. If you do this first with the British instalment, and then do the same with everything "British" you find in my other instalments, and incorporate these batches of printed titles together in one chronological series, you will find yourself already a long way on your road toward the end—or to 1879 at any rate. Then your several thousand titles, each on its own card will stand before you in proper sequence, every new title you acquire to stop a gap in the series will drop into its proper place, and you can continue the series from 1879 onward to present date. All this will be merely mechanical labor, involving no research, and you can do it anywhere, at any time. After that your real bibliographical labors will begin.

Let me set up a danger signal at the start, by adducing my favorite maxim: "*Error lurks in wait on every transcription.*" Do not copy my MS titles. If my long, narrow little title-slips in manuscript do not fit the size and shape of the cards you use, better paste a fold over one end, then undertake to copy them. They will not look neat and tidy, so handled, but chances of error will be appreciably lessened; also you will save yourself much needless penwork.

I trust that the remarks, which as a rule accompany my titles, will commend themselves to your judgment, and be available for your own purposes—both those in print already and those in MS that have not yet seen the light. It was always my aim to make them as concise and precise as possible, but some are quite extensive in the cases of rare, curious or standard titles—as Bewick, White, McGillivray, etc., etc. I shall be glad to know that, as a rule, you find these terse characterizations just and sound, so that you can perpetuate them in the new work, and perhaps also use their general tenor, scope and purposes as something of a guide to your own work in this respect.

The copy of *Pass. dom.* paper which I sent you is defective, but only lacks one leaf of introductory matter devoted to abuse of the Sparrow in this country and explanative of the batch of titles which follows. So your copy lacks nothing that you need to use; which is fortunate, as I have but one other in my possession.

Thanks for your kind offer. I think of no special book or paper that I need, but if you happen to have at any time some quaint or curious publication that you can spare of course I should be pleased with such an addition to my library.

Wishing you perfect success, and at your further service, I remain

Very cordially yours,

ELLIOTT COUES.

The sequel of this correspondence is furnished by Mr. Butterfield in a prefatory note to 'A List of Books relating to British Birds, from the Library of W. H. Mullens,' by W. Ruskin Butterfield, from *Occasional Publication* No. 3, Hastings & St. Leonard. Natural History Society, Decr. 1908. Here it is:—

"In 1897 the late Dr. Coues entrusted to me the task of completing up-to-date, the portions of his bibliography relating to our native birds, and placed in my hands the additional material he had collected; moreover, he procured from Professor Newton, of Cambridge, the consent of the latter to assist me with advice, a favour of which I took full advantage. But I speedily found that I had embarked upon a task of no small magnitude. It was easy enough to deal with the books in my possession, but when these were finished it became necessary to visit the great libraries in London, and at length, from various circumstances, I found it difficult to continue."

In a recent reply to an inquiry, Mr. Butterfield writes:

"I handed to Major W. H. Mullens my notes together with the notes of the late Dr. Coues relating to the bibliography of British Birds, referred to *supra*. I took this course as there was no likelihood of my preparing a bibliography myself within a reasonable time, and I was anxious that use should be made of the notes. As you are doubtless aware, the bibliography by Major Mullens (and others) has appeared. The late Dr. Coues did not hand to me any bibliographical material except that relating to British Birds."

And that's that, but on reading these contributions to the history of ornithology one is impelled to ask, "Are there no Americans, who can or will assume the labor of completing the Instalments?"

We are well aware of the immensity of the task—the lingual difficulties, the large expenditure of time, money and energy,

the provision of specially trained assistants, and all the other considerations involved in such a far-reaching adventure, but where in the whole range of avian research may one find a more meritorious scheme? Coues had not, so far as I can discover among about 200 letters in the E. S. W. Library collection, any definite plan to continue the American bibliography. Evidently he believed that if he could not undertake the work himself, he had not only laid a solid foundation, but had built much of the superstructure, and that other artisans would surely add the necessary storeys. Consequently, I re-echo heartily Dr. Witmer Stone's hope (*Auk*, April, 1927 p. 270) that "some patron of American Ornithology will make it possible for a properly equipped compiler to carry on the work of Coues and aid the research of every student by placing before him, in chronological order all the papers on American birds from 1878 to date."

Let me add to the foregoing, that entirely to realize Coues' ambition, the patron in question should supply sufficient funds for the collection of *all* titles on the birds of the world, for the benefit of research students in every department of *general* ornithology.

Much of this work has been done here and there (*teste* Grinnell's extensive and valuable Pacific Coast bibliography) in various languages and when these piecemeal contributions have been assembled (and perhaps checked and annotated) they will materially lighten the labors of the corps of compilers engaged on the greater task.

In any event, the completion of the American section of such a work is not only a useful and desirable undertaking in itself, but it could at any time be absorbed in the proposed volumes on the bibliography of universal ornithology.

7 West Madison St.,
Chicago, Ill.

[Dr. Wood's letters recalled to my mind a publication by Dr. Coues in 'The Osprey' (Vol. II, p. 39.) dealing in part with this same matter, and also some correspondence which I had with him on the subject of the 'Bibliography'. As the early issues of 'The Osprey' are not now easily obtainable a republication of his article may not be out of place. It is as follows:

"The bibliography of ornithology is a subject which occupied me for several years, in the seventies, and upon which I expended an enormous amount of labor, with mainly my own pen, with comparatively little ostensible result. In 1880 I had published four installments of my intended 'Universal Bibliography of Ornithology,' these being a few thousand titles relating to the birds of North and South America and Great Britain. In that year my machinery for doing the work broke down, and I found myself amidst the debris of the great work I had projected or partially accomplished, with many thousand manuscript titles on hand, and no prospect of their ever seeing the light. What I had been able to do was to set the high water mark of excellence in such work, and make a model for the bibliographer of the future, in those small portions of the whole undertaking which appeared in print. It was not only good work, but also extremely useful and sorely needed; and I think I never did anything else in my life which brought me such hearty praise "in mouths of wisest censure"—immediate and almost universal recognition, at home and abroad, from ornithologists who knew that bibliography was a necessary nuisance, and a horrible drudgery that no mere drudge could perform. It takes a sort of an inspired idiot to be a good bibliographer, and his inspiration is as dangerous a gift as the appetite of the gambler or dipsomaniac—it grows with what it feeds upon, and finally possesses its victim like any other invincible vice. Perhaps it is lucky for me that I was forcibly divorced from my bibliographical mania; at any rate, years have cured me of the habit, and I shall never again be spell bound in that way. But my own cure need not and will not deter others from trying bibliography for themselves; we must all buy our experiences, and are lucky if we do not pay too dearly for them. After all these years, during which the vast accumulation of unpublished titles slept on my hands, and during which I abandoned all hope of their utilization, I have just sent to a gentleman in England everything I own in manuscript relating to British birds, for the preparation of a new and up-to-date edition of that portion of my published bibliography. I trust he does not enter upon his bibliographical travail with too light a heart—if he does, may the Nemesis who overrules us all have mercy on his bibliographical soul! This raises another question, which may be put in this way: Where is the man who will undertake to bring my North American Bibliography up-to-date? The field is white to the harvesting of a splendid crop of titles of books and papers published on the birds of North America since my scythe has been rusting; and on the basis of what I garnered years ago any aspirant for fame who has the requisite qualifications and is not afraid of hard work can erect a monument more lasting than brass. Among the requisite qualifications, may be reckoned more zeal than discretion, youth, health, strength, staying powers, unlimited time at command, and access to the foci of ornithological literature in some large eastern city. All my material, both published and unpublished, shall be at the service of any such individual, with any such opportunities, and any such appetite for bibliographical immortality:

I will even throw my blessing into the bargain. What do I hear in answer to this advertisement: "Wanted a competent bibliographer of North American ornithology."?—E. C.

It happened that I had been for some time engaged upon a sort of index to ornithological papers and upon reading Dr. Coues article I at once wrote to him regarding this work and its relation to the bibliography that he was advocating. His answer follows:

November 17, 1897.

MY DEAR MR. STONE:

So you turn out to be one of those "what-d'ye-call 'ems" I went still hunting for in the Osprey. Well!

What you seem to have done is to make an index to the book you have not made. That sort of thing is not bibliography. What you want is titles of books and papers alphabetical by authors, or better in chronological order alphabetized by authors under each year, each title explained or amplified when necessary even with synopsis of its contents, then these contents, titles and authors, all indexed.

That is what my Bibliography proposed but as it broke down it was left indexless. You are the very man, I should judge, to take up and complete this work. Why not? Begin with 1879 when I broke down, on the exact model I have set, take every note or least article by title and author, to be found in any periodical, add all books published 1879 or later, and you would have the required bibliog. which I warrant you could get published. In that event whatever work you have already done on your incomplete card catalogue would come in. Otherwise it will probably never be utilized except for your private information.

If I could practically complete my bibliog. down to 1879 you should have little difficulty in bringing it down to date. I advise you by all means to do it. Study carefully the idea as set forth in the preface to my appendix in *Birds Col. Vall.* and also my remarks to the further installment in the *Hayden Bulletin* and write me again what you think about it. It goes without saying that I should be deeply interested in your work, would make you free to anything I have and give you all the assistance in my power. Produce the work and then we will attend to its publication.

Cordially yours,
ELLIOTT COUES.

Another letter followed in which he said "By all means make a start and let consequences take care of themselves later on. Begin with 'Nulla dies sine linea' and the result will soon astonish and gratify you making you wonder how and when you managed

to do so much." He suggested beginning with the 'Bulletin of the Nuttall Club' and 'The Auk' and said: "I think the A. O. U. would print the result as an extra Index volume of 'The Auk,' the subject lately came up in Council and we agreed the work ought to be done but had nobody to do it."

The first index volume to 'The Auk' being by that time under serious consideration by a Committee I thought it best to devote my attention to other journals and in odd moments during the next two years I covered nearly all of the American journals in the library of the Philadelphia Academy writing out some 3000 titles and eventually brought the work down to 1900. Then lack of time brought the effort to a stop. Upon Dr. Coues' death I thought of his promise to send me the unpublished titles that he had accumulated and wrote to Mrs. Coues. She very kindly promised to send them but they could not be found. Whether they were preserved I do not know.

I had by this time been cured of *my* bibliographic mania and my hope is that someone else may contract the disease, that it may run a full course and that some good and generous doctor may prescribe for it in the form of financial endowment. If so I shall be pleased to offer my 3000 titles and *my* blessing as I repeat the Couesian advertisement of 1897 "Wanted a bibliographer of American ornithology!"—Witmer Stone.]

A STUDY OF THE RED-WINGED BLACKBIRDS OF SOUTHEASTERN UNITED STATES.¹

BY ARTHUR H. HOWELL AND A. J. VAN ROSSEM.

THE nomenclatural status of the Red-winged Blackbirds of eastern United States is at present somewhat in confusion, due chiefly to the lack of adequate breeding specimens from critical localities. Mearns, in 1911,² stated that the typical race (*phoeniceus*) was the form breeding from South Carolina southward through middle Florida; he therefore revived the name *predatorius* for the northern race (formerly called *phoeniceus*), and relegated *floridanus* (which was currently applied to the Florida race) to synonymy. Our studies have demonstrated, however, that the typical race (*phoeniceus*) is the form breeding throughout eastern United States south to northern Florida, and that *floridanus* is restricted to the southern tip of the peninsula, thus leaving the bird of middle Florida without a name.

In the course of field work for the U. S. Biological Survey in 1926 the senior author collected a small series of breeding Red-winged Blackbirds on Santa Rosa Island, Florida, which appeared to represent an undescribed race. To this series, through the coöperation of Mr. Francis M. Weston of Pensacola, Florida, we have since added a number of specimens from the shores of Pensacola Bay.

The junior author, in connection with a revision of the genus *Agelaius*, has recently examined large series of Redwings in the principal collections in eastern museums and during his visit to Washington it developed that the two authors had reached practically identical views with reference to the races of the Redwing in Florida and the other Gulf States. It seemed desirable, therefore, to work out the problems in coöperation.

Our decisions have been based entirely on breeding specimens, and in the present discussion, wintering birds have been ignored.

¹ Joint contribution from the Bureau of Biological Survey and the California Institute of Technology.

² Proc. Biol. Soc. Washington, vol. 24, p. 226, 1911.

***Agelaius phoeniceus phoeniceus* (Linnaeus)**

EASTERN RED-WINGED BLACKBIRD

[*Oriolus*] *phoeniceus* Linnaeus, Syst. Nat., ed. 12, vol. 1, p. 161, 1766
(based on *Sturnus niger, alis superne rubentis* Catesby, Nat. Hist.
Carolina, vol. 1, p. 13, pl. 13, 1731).

Sturnus predatorius Wilson, Amer. Ornith., vol. 4, p. 30, plate 30, 1811.

Subspecific characters.—Compared with *mearnsi* (see *postea*): Size larger; bill slightly shorter and decidedly thicker at base; females with upper parts more blackish (less brownish); under parts clearer white (less buffy), with dark streaks more blackish.

Remarks.—When Dr. Mearns assigned the name *phoeniceus* to the Redwings of the Florida Peninsula and revived *predatorius* of Wilson for the northern race, he based his decision on a small series of breeding birds from the vicinity of Charleston, South Carolina. This series, collected by Mearns, Riley, and Brown is still available in the U. S. National Museum collection and has been reexamined by the writers in the present connection. Of the 9 males, only 3 are adult, the other 6 being one year old birds. It can not be too strongly emphasized that one year old males have decidedly shorter wings and tails than adults, and due to the preponderance of young males in the series examined by Mearns, the average measurements come closer in these particulars to the measurements of Florida adults than to those of the northern race; however, when the adults and immatures are separated the 6 one year old birds are found to closely approximate in measurements immature specimens from the north, and the same is true of the adults. Furthermore, it seems clear to us that Mearns was in error in stating that Catesby's plate represents the slender-billed bird of Florida, for measurements of the figure give the culmen a length of 21 mm.; the bill is shown open, but the combined measurements of maxilla and mandible give the bill a depth at base of 13.2 mm. There is, of course, no certainty that Catesby intended to figure his bird exactly life size, but the proportions of the bill certainly apply only to the northern race.

In color, breeding females from the coast of South Carolina and Georgia are clearly referable to the race ranging throughout the northeastern States, and show no approach in this character to the brownish birds of the Florida peninsula. Specimens from the extreme southern part of the range, however, show intergrada-

tion in measurements with *mearnsi* of the Florida peninsula, as would be expected.

It is generally admitted that the bulk of Catesby's collecting was done in the coast region of South Carolina, and since no more definite locality than "North America" was designated by Linnaeus for this species, we hereby select Charleston, South Carolina, as the type locality of *phoeniceus*. This subspecies ranges from the southern border of Georgia on the coast and from Gainesville, Florida, northward throughout the eastern United States.

Material is lacking from the northeastern coast of Florida to show which form breeds there. A single female specimen from Pellicer's Creek, St. John County, is nearer to *phoeniceus* than to *mearnsi*, being identical with the former in color and intermediate in measurements (as are the Gainesville birds), but on the basis of one specimen, we reserve decision as to the prevailing form in that region.

Specimens examined.—Total number, 56, from localities as follows:

Florida: Gainesville, 4.

Georgia: Cumberland Island, 8; St. Marys, 2; Chatham County, 3; Macon, 1; Athens, 3; Roswell, 2; Toccoa, 1; Margret (Fannin County), 2; Chatsworth, 4.

South Carolina: Wayne's Place, near Mt. Pleasant, 12; Port Royal, 1.

Alabama: Autaugaville, 4; Barachias, 1; Seale, 1; Attala, 2; Leighton, 1.

Mississippi: Duck Hill, 1; Minter City, 1; Cedar Bluff, 1; Raymond, 1.

In addition to the above, approximately 200 breeding specimens from the general range of the subspecies have been examined and measured.

***Agelaius phoeniceus littoralis* subsp. nov.**

GULF COAST REDWING

Type, ♀ adult, No. 298,920, U. S. Nat. Mus. (Biological Survey collection); collected on Santa Rosa Island, opposite Mary Esther, Florida, April 19, 1926, by A. H. Howell; original number, 2102.

Range.—Gulf coast region, from Choctawhatchee Bay, Florida, westward at least to Galveston, Texas.

Subspecific characters.—Compared with *Agelaius phoeniceus phoeniceus* of northeastern United States: Coloration of females darker, both above and below, particularly on the rump; general tone of upper parts in breeding plumage fuscous-black, with median crown stripe and buffy edgings on nape and interscapular region nearly obsolete; ground color of under parts less buffy (more whitish), the dark streaks broader and averaging more blackish; wing and tail slightly shorter; bill slightly more slender in lateral profile. Compared with *A. p. mearnsi*: Coloration of females throughout very much more blackish (less brownish), the brown and buff edgings to the feathers of the head, nape, interscapular region, and wings very much reduced; streaks on under parts decidedly more blackish, the ground color less buffy (more whitish); bill shorter, and thicker at base; wing averaging slightly longer.

Remarks.—This subspecies, the darkest of all the eastern races, apparently ranges little, if any, above the tidewater region. It appears to be more closely related to *phoeniceus* than to *mearnsi* or *megapotamus*,¹ but material is lacking to show with certainty the area of intergradation with any of these races.

The birds from Whitfield, Florida are not typical; 3 females taken February 13, 14, and March 21 agree with *littoralis* in color but have slenderer bills, thus indicating approach to *mearnsi*; the four males (taken December 30, February 24, March 18 and 23) seem to be typical *littoralis*; one female, taken February 19, is apparently a transient, nearest to *phoeniceus* in characters.

The large series from Gueydan, Louisiana, including both breeding and wintering individuals, are not typical, being slightly paler both above and below, but agreeing in measurements and proportions with typical *littoralis*.

Specimens examined.—Total number, 67, from localities as follows:

Florida: Whitfield, 3; Santa Rosa Island, 6; Pensacola Bay, 8.

Alabama: Mobile, 2.

Mississippi: Bay St. Louis, 3; Jefferson Parish, 1.

Louisiana: Breton Island, 3; Bel Air, 3; Lake Borgne, 1; Timbalier Island, 1; Morgan City, 2; Avery Island, 5; Gueydan, 28.

Texas: Galveston, 1.

¹ Oberholser, Wilson Bull., vol. 31, p. 20, March, 1919; from southern Texas and northeastern Mexico.

***Agelaius phoeniceus mearnsi*¹ subsp. nov.**

FLORIDA REDWING

Agelaius phoeniceus floridanus Ridgway (not of Maynard) Birds North and Middle Amer., pt. 2, p. 333, 1902 (part).

Agelaius phoeniceus phoeniceus Mearns (not of Linnaeus) Proc. Biol. Soc. Washington, vol. 24, p. 227, October 31, 1911 (part).

Type, ♀ adult (breeding), No. 176,936, U. S. Nat. Museum. Collected at Alligator Bluff, Kissimmee River, Florida, April 27, 1901, by Edgar A. Mearns; original number, 12,560.

Range.—Greater part of the Florida peninsula, south to the lower Kissimmee Valley and the Caloosahatchee River; north at least to Putnam County (San Mateo) and Anastasia Island; west on the Gulf coast to Apalachicola.

Subspecific characters.—Compared with *phoeniceus*: Size smaller; bill longer and more slender, both actually and relatively; coloration of upper parts in females more brownish (less blackish); under parts more buffy (less whitish), the dark streaks more brownish.

Remarks.—In the present race, the maximum brownish suffusion found in *Agelaius phoeniceus* is attained; this character at once distinguishes *mearnsi* from all the other races occupying the Caribbean area (*bryanti*, *floridanus*, *littoralis*, *megapotamus*, and *richmondi*).

Specimens from the Gulf Coast of Florida, particularly from the northern portion, have somewhat thicker bills than those from central and eastern Florida, thus indicating a gradual approach in this character to *littoralis* of the western Gulf Coast. Specimens from the Caloosahatchee Valley (Alva and Ft. Myers) show approach in paler coloration to *floridanus*, of south Florida.

Breeding material is lacking from the lower St. Johns Valley, hence the area of intergradation with *phoeniceus* is not definitely known; quite probably this race will be found to range northward nearly or quite to Jacksonville.

Specimens examined.—Total number, 144, from localities as follows:

Florida: Anastasia Island, 2; San Mateo, 1; Big Lake George, 1; northern Brevard County, 5; Merritt's Island, 6; Banana River, 5; Canaveral, 3; Lake Jessup, 1; Enterprise, 1; Orlando, 2; Blue Spring, 1; Lake Kissimmee, 4; Lake Arbuckle, 2; Kissimmee

¹ Named for the late Dr. Edgar A. Mearns, whose extensive collections have enabled us to discriminate this subspecies.

River, 18; Ft. Bassenger, 2; Kissimmee (24 miles southwest), 1; Southport Canal (Osceola County), 1; Ft. Thompson, 3; Alva, 9; Ft. Myers, 20; Pine Island, Charlotte Harbor, 11; Gulfport, 6; Seminole, 1; Pasadena, 2; Pass-a-Grille, 8; Indian Rocks (Pinellas Co.), 4; Clearwater, 3; Seven Oaks, 1; Port Richey, 3; Chassahowitzka River, 2; Cedar Keys, 3; Sumner, 3; Lukens, 4; Grassy Island, Taylor County, 2; Aucilla River (mouth), 2; Apalachicola, 1.

***Agelaius phoeniceus floridanus* Maynard**

MAYNARD'S REDWING

Agelaius phoeniceus floridanus Maynard, Birds East. North Amer., 2nd ed., part 40, p. 698, 1895 (Key West, Florida).

Agelaius phoeniceus bryanti Ridgway, Birds North and Middle Amer., Bull. 50 U. S. Nat. Mus., part 2, pp. 334-335, 1902 (part; specimens from Lake Worth, Miami, and Key West).

Range.—Resident on the Florida Keys and the southern end of the Florida Peninsula, north at least to Lake Worth on the east coast and to Everglade, Collier County, on the west coast.

Subspecific characters.—Compared with *mearnsi*: In size and proportions practically identical; coloration of upper parts in females paler, less brownish, and more extensively marked with whitish; superciliary stripe averaging broader and more whitish (less buffy); underparts more whitish (less buffy). Compared with *bryanti*: Size similar; bill of similar proportions but averaging shorter; coloration of females decidedly more brownish (less whitish) below and more brownish and less extensively flecked with whitish above. This race is thus intermediate in color between the strongly brown race of central Florida (*mearnsi*) and *bryanti*, the whitest of all the races of *phoeniceus*.

Remarks.—Described by Maynard in 1895 from Key West, this race was accepted by Ridgway in his 'Birds of North and Middle America' (part 2, p. 333, 1902), but by a strange inconsistency the range assigned to it definitely excluded its type region, whereas the Keys birds were referred to *bryanti*. Following this it was introduced into the third edition of the A. O. U. 'Check-List,' where the same error was perpetuated, its range being given as "Florida (except the southeastern coast and Keys), and west along the Gulf coast at least to Galveston, Texas."

When Mearns, in 1911, applied the name *phoeniceus* to the central Florida form, he relegated *floridanus* to synonymy. Recent collections from extreme south Florida and the Keys, however,

serve to show that *floridanus* is a well marked race, differing from both *bryanti* of the Bahamas and *mearnsi* of central Florida.

Through the kindness of Dr. Thomas Barbour and Mr. Outram Bangs of the Museum of Comparative Zoology, we have been enabled to examine the two cotypes (♂ and ♀) of this subspecies.¹ The female, although taken in midwinter (Nov. 19, 1870), is unmistakably of the pale resident Keys race and the male (Dec., 1870), although showing no diagnostic characters, is likewise in no way distinguishable from breeding birds from the Florida Keys.

One female specimen from Everglade is a typical *floridanus*; another (March 12) is darker above and apparently an intergrade toward *mearnsi*. Evidently, intergradation with *mearnsi* takes place between Everglade and the Caloosahatchee River.

Specimens examined.—Total number, 77, from localities as follows:

Florida: Key West, 5; Big Pine Key, 1; Little Pine Key, 1; Bamboo Key, 1; Cave Key, 1; Cape Sable, 9; Flamingo, 3; East Fox Lake, 1; Bear Lake, 2; Alligator Lake, 2; Royal Palm Hammock, 7; Shark River, 2; Everglade, 5; Coconut Grove, 1; Cutler, 3; Lemon City, 3; Tamiami Trail (20 miles west of Miami), 4; Palm Beach, 10; Lake Worth, 5; Monroe County, 2; Miami, 1.

MEASUREMENTS OF ADULT MALES

Agelaius phoeniceus phoeniceus (Linnaeus)

50 adult males from: Penn. (19); New Jersey (2); New York (11); Mass. (18).

Wing	Tail	Culmen	Depth	Tarsus	Mid-toe (with Claw)
113.5-128.5 (120.7)	86.0-98.0 (91.3)	21.9-25.0 (23.7)	11.3-13.3 (12.5)	27.0-30.3 (29.0)	19.4-22.2 (20.7)

12 adult males from: Charleston, South Carolina (3); Georgia (interior, 3; Camden County, 5; and Savannah, 1).

113.5-122.5 (119.2)	86.0-98.0 (92.0)	23.3-25.7 (24.6)	11.8-13.5 (12.6)	29.0-30.0 (29.5)	19.0-22.0 (21.0)
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2 adult males from Gainesville, Florida.

116.0-117.5 (116.8)	86.0-91.0 (88.5)	24.8-24.9 (24.9)	12.2-12.4 (12.3)	29.2-30.0 (29.6)	20.3-22.0 (21.2)
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¹ Nos. 13963, 13976, Mus. Comp. Zool.

Agelaius phoeniceus mearnsi Howell & van Rossem

35 adult males from interior and eastern central Florida.

109.0-118.5	81.0-93.5	23.8-27.2	10.5-12.1	27.2-30.0	19.0-22.0
(113.1)	(87.4)	(25.0)	(11.2)	(28.7)	(20.3)

Agelaius phoeniceus floridanus Maynard

26 adult males from southern Florida and Keys.

107.5-119.0	76.5-92.5	23.2-27.0	10.2-12.0	25.7-29.5	18.6-21.3
(113.2)	(86.2)	(25.1)	(11.0)	(27.8)	(20.2)

Agelaius phoeniceus littoralis Howell & van Rossem

2 adult males from Santa Rosa Island and Pensacola, Florida.

113.0-116.0	85.5-86.0	23.8-24.0	12.1-12.1	27.5-29.5	19.4-21.2
(114.5)	(85.8)	(23.9)	(12.1)	(28.5)	(20.3)

13 adult males from coast of Louisiana.

110.0-118.0	85.0-93.0	23.2-27.0	11.4-13.1	28.3-30.2	20.3-22.3
(114.5)	(88.8)	(25.2)	(12.0)	(29.2)	(21.2)

One year old males of all races average about 9% smaller.

ADULT FEMALES

Agelaius phoeniceus phoeniceus (Linnaeus)

40 adult females from: Penn. (18); New York, (3); Mass. (16); Conn. (3).

Wing	Tail	Culmen	Depth	Tarsus	Mid-toe
95.0-104.0	67.0-78.0	18.1-21.4	10.0-12.1	24.5-27.7	17.1-19.4
(98.9)	(72.7)	(19.9)	(10.7)	(25.8)	(18.3)

16 adult females from: South Carolina, (Charleston, 3); Georgia, (interior, 8; Cumberland Island and Savannah, 5).

92.0-102.0	68.0-77.5	19.0-22.9	9.9-11.3	24.3-27.0	17.2-19.2
(96.5)	(72.0)	(20.4)	(10.8)	(25.8)	(18.6)

1 adult female from Gainesville, Florida.

93.5	74.0	19.8	10.0	25.4	18.8
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Agelaius phoeniceus mearnsi Howell & van Rossem

20 adult females from interior and eastern central Florida.

89.0-96.5	66.5-74.5	19.4-22.2	8.9-10.3	24.2-26.0	16.8-19.8
(92.8)	(70.9)	(21.0)	(9.7)	(25.2)	(17.9)

Agelaius phoeniceus floridanus Maynard

18 adult females from southern Florida and Keys.

89.0-96.5	65.5-74.5	19.2-21.5	8.8-9.8	23.8-25.8	17.0-18.5
(93.2)	(70.2)	(20.3)	(9.4)	(24.8)	(17.6)

Agelaius phoeniceus littoralis Howell & van Rossem

9 adult females from Santa Rosa Island (5) and Pensacola (4), Florida.

94.0-98.0	69.0-71.0	20.3-21.4	10.0-11.5	24.5-26.1	16.5-18.8
(95.5)	(70.2)	(20.8)	(10.7)	(25.0)	(17.7)

23 adult females from coast of Louisiana.

90.0-96.0 ¹	68.0-73.0 ¹	19.4-23.0	10.1-11.1	25.0-26.9	17.1-19.0
(92.6)	(70.5)	(21.0)	(10.6)	(25.7)	(18.1)

¹ Eight birds not measured for wing and tail because of excessive wear.

U. S. Biol. Survey, Washington, D. C.
and Pasadena, Calif.

FURTHER NOTES ON THE BIRDS OF LEON COUNTY,
FLORIDA—FOURTH SUPPLEMENT.

BY R. W. WILLIAMS.

SINCE the publication in 1914 of the last supplement to my 'Preliminary List of the Birds of Leon County, Florida' (Auk, XXI, 449), Mr. Ludlow Griscom and Mr. Herbert L. Stoddard have been active in the northern part of the County. Mr. Stoddard's notes, access to which he has kindly allowed me, cover rather continuous observations in the years 1924-1927 while engaged upon his primary project, the Quail Investigation in southern Georgia and north central Florida. Mr. Griscom's observations have been more limited in time and are mainly recorded in 'The Auk,' reference to which presently will be made. I have visited the County each year for brief periods either in spring or fall.

Mr. Bradford Torrey spent the first two weeks of April, 1893, in Tallahassee and approximately half of his charming little book, entitled 'A Florida Sketch-Book,' published in 1894, is devoted to his rambles in the purlieus of that city. Latterly I have discovered that he records in this book two species that have been noted, I believe, by no one else—White-crowned Sparrow and Rough-winged Swallow.

My original list, *supra*, and the three supplements (Auk, XXIII, 153; XXIV, 158; XXXI, 494) totalled 192 species.

In his 'Notes from Leon Co., Florida,' published in 1916 (Auk, XXXIII, 329), Mr. Griscom added the Florida Bob-white, and in his 'Further Notes from Leon Co., Florida,' published in 1919 (Auk, XXXVI, 587), he increased the list by 3 more—Florida Cormorant, Fish Crow, and Lincoln's Sparrow—continuing the numeration from my last supplement and showing a total of 196 species.

To preserve the continuity of my enumeration of the birds of the County I must repeat Mr. Griscom's additions, but under different ordinal numbers.

Two or three errors in my original list need to be corrected and some further data on a few species will be added.

The numeration continues on from my last supplement and totals 218 species for the County.

193. *Chlidonias nigra surinamensis*. BLACK TERN.—Mr. Stoddard saw about 30 on Lake Jackson August 17, 1924, and noted them in diminished numbers until September 28. He first saw them in 1925 on August 9.

194. *Phalacrocorax auritus floridanus*. FLORIDA CORMORANT.—Mr. Griscom saw 2 on Lake Iamonia March 26, 1919. (Auk, XXXVI, 587). Mr. Stoddard collected one on Lake Iamonia December 24, 1924. April 12, 1926, one arose from Lake Jackson and flew past me within a few yards, and April 13, 1927 I saw another on this lake.

195. *Pelecanus erythrorhynchos*. WHITE PELICAN.—Mr. Stoddard says, "A fine individual came up the lake (Jackson), alighted in edge of the pond and swam about 15 minutes, then circled over the lake and crossed back directly over our heads, not over 100 feet up"—October 4, 1925.

196. *Chaulelasmus streperus*. GADWALL.—October 25, 1925, Mr. Stoddard saw 4 in female and 1 in male plumage on Lake Jackson.

Querquedula cyanoptera. CINNAMON TEAL.—In my second supplement which appeared in 'The Auk' for April, 1907, I restated Mr. Samuel N. Rhoads' record (Auk, X, 362) of the capture of a Cinnamon Teal on Lake Iamonia, Florida, allocating the record to Leon County, in which this lake lies. In the same issue appeared Mr. William Brewster's critical article on the several "supposed" records of the Cinnamon Teal from Florida and South Carolina, including Mr. Rhoads'. Naturally, Mr. Brewster's skepticism as to the Rhoads record gave me some perturbation, and chancing to meet Dr. Witmer Stone a few days thereafter I mentioned the matter to him. He assured me that this record was correct and that the specimen, an adult male, was then in the Philadelphia Academy of Natural Sciences. See also Mr. Rhoads' note in 'The Auk', XXIV, 435. I included this species in my list both on this record and on Mr. E. B. Garner's statement to me that he had killed one in the County, and as he was one of the most experienced hunters and amateur nature observers then in our County I can not doubt the accuracy of his statement.

Charitonetta albeola. BUFFLE-HEAD.—November 21, 1925, I shot one on "Lake Willoughby" on my place five miles east of Tallahassee. It was alone and feeding near the shore, diving now and again after the manner of Grebes.

Clangula hyemalis. OLD SQUAW.—Mr. Oscar Groover of Thomasville, Ga., shot a male on Lake Iamonia, January 17, 1927. Mr. H. L. Stoddard has the specimen. Mr. Stringer of Beachton, Ga. saw three on this lake in the second week in February, 1927.

197. *Ardea occidentalis*. GREAT WHITE HERON.—October 4, 1925, Mr. Stoddard collected an adult female on Lake Jackson. He had seen it on several occasions in the same region as early as August 9.

198. *Nyctanassa violacea*. YELLOW-CROWNED NIGHT HERON.—Mr. Stoddard saw an adult in full breeding plumage on Lake Jackson May 31, 1925, and on June 20 another adult on the same lake. He regards this Heron as a summer resident in small numbers.

199. *Steganopus tricolor*. WILSON'S PHALAROPE.—Mr. Stoddard saw one on Lake Jackson September 12, 1926, in association with some other shore birds.

200. *Micropalama himantopus*. STILT SANDPIPER.—October 8, 1927, Mr. Stoddard, while making the scheduled census of wild Ducks on Lake Jackson, collected an adult male which was feeding on the marsh with six Lesser Yellowlegs.

201. *Pisobia minutilla*. LEAST SANDPIPER.—Mr. Stoddard found several on Lake Jackson, September 4, 1927.

Pisobia maculata. PECTORAL SANDPIPER.—Mr. Stoddard has found this Sandpiper more or less abundant on Lake Jackson from late July into November.

202. *Ereunetes pusillus*. SEMIPALMATED SANDPIPER.—Mr. Stoddard has found this Sandpiper in some numbers on Lake Jackson from late July well into October, on the 12th of which latter month he saw about 25 feeding on close-cropped, high and dry pasture. He saw two May 31, 1925, and I saw several April 12, 1926, on same lake.

203. *Ereunetes mauri*. WESTERN SANDPIPER.—Mr. Stoddard collected one and saw 3 others on Lake Jackson October 7, 1926. He says, "I think they will prove to be regular but comparatively rare in late September and early October."

204. *Totanus melanoleucus*. GREATER YELLOW-LEGS.—November 21, 1921, I collected one on the shore of "Lake Willoughby" on my place, 5 miles east of Tallahassee. It was feeding with several Wilson's Snipe. The bird's left leg had been shot off above the tarsus, leaving a short stump which had completely healed. April 12, 1926, I saw 2 on Lake Jackson, and 2 again on April 13, 1927.

205. *Totanus flavipes*. LESSER YELLOW-LEGS.—Mr. Bradford Torrey in his 'A Florida Sketch-Book,' pp. 181 and 191, refers to several that he saw just west of Tallahassee on April 10 and 12, 1893. Mr. Stoddard has found them in numbers varying from 1 to 12 on Lake Jackson from the first of August to November 9. I saw several on Lake Jackson April 12, 1926, and again April 13, 1927.

206. *Tryngites subruficollis*. BUFF-BREASTED SANDPIPER.—September 12, 1926, Mr. Stoddard saw 3 among the Killdeers and Pectoral Sandpipers on Lake Jackson and collected one, a male. On the following day he collected another male at the same place.

207. *Squatarola squatarola*. BLACK-BELLIED PLOVER.—September 3, 1926, Mr. Stoddard saw one on Lake Jackson and another October 2, 1927.

Oxyechus vociferus. KILLDEER.—June 12, 1927, Mr. Plez Strickland, who has resided in the vicinity for many years, pointed out to Mr. Stoddard

two nests of this species on Lake Iamonia, one containing 4 and other 2 eggs and told him that the Killdeer has nested in that locality ever since he was a boy. It is, however, very sparingly represented in the County in the breeding season.

208. *Colinus virginianus floridanus*. FLORIDA BOB-WHITE.—Mr. Griscom says that 6 males shot on the Horseshoe Plantation, in the northern part of the County on January 1, 1916, were typical *floridanus*. ('Auk,' XXXIII, 329). The characteristic Bob-whites in the County are intermediates, with strong tendency, however, toward *floridanus*.

***Zenaidura macroura carolinensis*.** MOURNING DOVE.—On Thanksgiving Day, 1923, one of the tenants on the Miller plantation, 6 miles east of Tallahassee, recovered a Dove from a Hawk and finding a band on its leg, turned it over to Mr. Robert D. Foote of Morristown, N. J., who owned shooting privileges in that region. He sent it to me and on inquiry at the Biological Survey I found that it had been banded at Kansas, Ill., Sept. 21, 1923, by Mr. W. B. Taber, Jr.

***Accipiter velox*.** SHARP-SHINNED HAWK.—In my original list this was said to be a resident. It is fairly abundant in winter, but I now doubt that it occurs regularly, if at all, in summer.

209. *Astur atricapillus*. GOSHAWK.—Mr. Stoddard has a male, killed by Mr. H. P. Whitney in the northern part of the County, December 1, 1926.

***Coccyzus erythrophthalmus*.** BLACK-BILLED CUCKOO.—In my original list this species was said to occur sparingly in summer, and it was stated that there was one record of its nesting. These statements were based upon a nest and 2 eggs collected about 1895, which differed so materially from the nest and eggs of *americanus* with which I was familiar, that I ascribed them to this species. I am now satisfied that they belonged to *americanus*. The Black-billed is, however, a migrant through the County.

***Antrostomus vociferus vociferus*.** WHIP-POOR-WILL.—The set of eggs ascribed to this species in my original list can too well have been of *carolinensis* to justify the retention of *vociferus* in the list as a breeding bird.

***Myiochanes virens*.** WOOD PEWEE.—May 19, 1925, I found one in full breeding song on my place 5 miles east of Tallahassee. Mr. Stoddard says it is a summer resident in small numbers in the pine woods of the northern part of the County.

***Empidonax virescens*.** ACADIAN FLYCATCHER.—I am now able to add this to the breeding birds of the County. May 10, 1916, I saw one and heard another in the woods on the edge of Sinai Pond on my place. Mr. Stoddard writes me of a nest and 3 eggs he collected on May 23, 1925, as follows: "These were taken on the south side of Forshala Lake, Leon County. Nest on trailing limb of a sapling about eighteen feet above the water, just within the border of a cypress swamp. About four other pairs inhabit a half mile of this strip of swamp and I find the

bird a fairly common summer resident in similar situations and along small water courses in northern Leon County. Have also found this bird (last week in May, 1925) within 2 miles of the Gulf in Jefferson County, so it probably occurs in suitable environment in the southern part of Leon County as well." The nest collected by Mr. Stoddard was entirely of spanish moss and imbedded in a cluster of that epiphyte.

210. *Corvus ossifragus*. FISH CROW.—Mr. Griscom found it an abundant resident of the shores and islands of Lake Iamonia. Mr. Stoddard finds it abundant on Lake Jackson.

211. *Sturnus vulgaris*. STARLING.—Mr. Stoddard saw 4 on Lake Jackson, November 9, 1924.

Molothrus ater ater. COWBIRD.—Mr. Griscom saw a flock of 5 in an old pasture on the southern outskirts of Tallahassee on March 27, 1919. Mr. Stoddard saw a flock of 15 or more, in dull plumage, on and around cattle on Lake Jackson August 9, 1925, and has seen others since.

212. *Xanthocephalus xanthocephalus*. YELLOW-HEADED BLACKBIRD.—Mr. Stoddard collected a male on Lake Jackson September 27, 1925. It was among a flock of Cowbirds attending a herd of cattle.

Euphagus carolinus. RUSTY BLACKBIRD.—Mr. Griscom saw 3 on the Horseshoe Plantation December 25, 1911. ('Bird-Lore,' XIV, 33).

Quiscalus quiscula aglaeus. FLORIDA GRACKLE.—Mr. Griscom saw 50 on the Horseshoe Plantation December 25, 1911 ('Bird-Lore,' XIV, 33) and Mr. Stoddard saw 12 in that section of the County December 27, 1925 (ibid. XXVIII, 35).

213. *Zonotrichia leucophrys leucophrys*. WHITE-CROWNED SPARROW.—Mr. Bradford Torrey, in his 'A Florida Sketch-Book,' pp. 190, 191, 201, 227, and 234, tells of the White-crowned Sparrows he saw on his rambles out of Tallahassee in the first two weeks of April, 1893. As he was a very careful and conscientious observer and writer and speaks of seeing these birds in association with White-throats, there would seem to be no reason to doubt his records. I have never seen the bird in the County and have not learned that anyone else has.

214. *Melospiza lincolni lincolni*. LINCOLN'S SPARROW.—Mr. Griscom saw one March 26, 1919, in the northern part of the County ('Auk,' XXXVI, 588) and he is the first, I believe, to discover this bird in the State. Mr. Stoddard, in his Quail-trapping operations on the H. P. Whitney plantation in the northern part of the County, caught 3 in his traps, one, March 13, another on the 18th, and the third on the 23rd, 1925. He thinks this bird is a regular spring migrant through the County in small numbers.

Pipilo erythrophthalmus alleni. WHITE-EYED TOWHEE.—Mr. Stoddard finds this the resident form in northern Leon County, but outnumbered in winter by the Red-eyed. He found a nest with 3 eggs June 26, 1924, on the H. P. Whitney plantation in a little pine tree about 4 feet high, the nest being about 18 inches above the ground, female present and scolding.

215. *Petrochelidon lunifrons lunifrons*. CLIFF SWALLOW.—Mr. Stoddard saw one on Lake Jackson September 21, 1924.

Riparia riparia. BANK SWALLOW.—In my original list it was stated that this bird was said to nest abundantly at St. Marks. I have no doubt now that the St. Marks species is the Rough-winged.

216. *Stelgidopteryx serripennis*. ROUGH-WINGED SWALLOW.—Mr. Bradford Torrey, in his 'A Florida Sketch-Book,' p. 218, says of 2 pairs he saw the first week in April, 1893, 2 or 3 miles west of Tallahassee, "Two of the birds—the first ones I had ever seen, to be sure of them—perched directly before me on the wire, one facing me, the other with his back turned. It was kindly done; and then, as if still further to gratify my curiosity, they visited a hole in the bank. A second hole was doubtless the property of the other pair." Mr. Francis M. Weston finds them nesting in small numbers in Escambia County, Fla., in the latitude of Leon County.

Lanivireo flavifrons. YELLOW-THROATED VIREO.—In my original list I noted this as a rare migrant. It is a fairly abundant summer resident. May 17, 1925, I found several in the mixed pine and oak woods 3 miles southwest of Tallahassee. They were singing persistently and a male which I collected exhibited the unmistakable evidence of a breeding bird. On the 19th I found them also on my place 5 miles east of Tallahassee.

217. *Vermivora chrysoptera*. GOLDEN-WINGED WARBLER.—Mr. Stoddard saw 2 on Lake Iamonia, September 7, 1924.

Dendroica discolor. PRAIRIE WARBLER.—This is an abundant spring migrant through the County. I found them quite numerous from April 9 to 15, 1926. On the 12th I heard one in characteristic nesting song in a grove of oaks on Lake Jackson and am very well persuaded that this bird nests in the County in small numbers. Mr. Stoddard says a few undoubtedly nest in the County as he has seen them in the breeding season.

Hylocichla mustelina. WOOD THRUSH.—This bird undoubtedly nests in the County. Mr. Stoddard writes me that he has found two nests in Grady County, Ga. within a mile of the Leon County line and has heard singing birds during the breeding season in three different Leon County localities. In the latter part of June, 1926, he heard one singing in the western part of the County.

218. *Hylocichla ustulata swainsoni*. OLIVE-BACKED THRUSH.—Mr. Stoddard saw 3 on Lake Iamonia October 12, 1924.

U. S. Dept. Agriculture,
Washington, D. C.

MORE COLORADO DUCKS.

BY W. H. BERGTOLD.

EVERYONE agrees that it is not only desirable, but urgent, to learn as fully and as soon as possible the number, and species distribution of water-fowl in the United States, and for that matter, in Canada also, as well as the factors which make for an increase or decrease of these valuable birds.

To further this end every ornithologist should search out and collect information bearing on these questions, from duck hunters, duck clubs, and through every other channel open to individuals. This work should be done *now* and ornithologists should make it their business to interview duck club officials and duck shooters concerning such facts.

Let us preach this idea now or else it will be too late. It seems probable that the present drain on our water-fowl population caused by shooting, duck diseases and the handicap to anatine perpetuation and increase, incidental to reclamation and other factors accompanying civilization is increasing, causing a slow and steady decrease in our water birds. This assumption may or may not be true; however this may be, it is obvious that a complete survey and census of our Ducks, Geese, and Swans should be made not only by individuals but also by various official bodies.

It is highly satisfactory to know that the U. S. Biological Survey is now engaged in such work. One must reiterate that everybody must get busy in this matter.

There must be hundreds, perhaps thousands, of shooting lists preserved in this country, lists made by duck shooters and duck clubs; such lists would be of immense value in their reflection of past conditions; they should be unearthed at the earliest possible moment for record and study.

It is a considerable satisfaction to me that, in a previous communication¹ I was able to record data, rescued from oblivion, relating to 26,000 ducks shot at a Colorado duck club during a

¹ Colorado Anatidae. Auk, January, 1924, p. 72.

period of nineteen years. It is a further gratification that I can now present additional statistics¹ covering more than 3,800 ducks shot in Colorado from 1913 to 1926. In these two sources we have available the data accruing from a record of 31,000 ducks, all taken in Colorado.

The combined statistics give opportunity to study effects not visible in either mass of data alone; in the first, 26,000 ducks were shot at one station by many gunners over a period of nineteen years, while in the second, 3,800 ducks were killed at several (5) different Colorado stations by one man only. These differences have bearings on the skill of shooters, their proclivities to select certain ducks, and the distribution of species at different stations.

The present paper permits the drawing of conclusions as to kinds of ducks found at five different places, a thing not possible in the first communication, and it furthermore allows of comparisons between the ducks of a mountain locality and those of the plains. Moreover it now becomes possible to survey the results of twenty-seven years duck shooting; it seems reasonable to believe that this length of time, and the relatively large number of ducks secured, ought to give one fairly correct basic conclusions as to species, their distribution, and their abundance, both as to location and in years.

Table No. 1 presents in condensed form all the data and information submitted for this present study. It is published in extenso, so that other students, if so minded, can draw their own conclusions from its contents, and in so doing possibly bring out relations not detected by myself. In this table the species are arranged according to their standing in abundance during the nine years of shooting, and there is also included a column giving the standing of the same species as published in my previous paper, and a second column giving the combined statistics of all the 31,000 ducks shot in twenty-seven years.

For the benefit of those not familiar with the topography of Colorado attention is invited to the fact that four of the stations contributing to the present list of 3,800 ducks, are located on the plains, and one in the mountains. The plains stations are at

¹ I am greatly indebted to the friend who shot these ducks for his pains in transcribing and tabulating his nine years duck shooting; I regret that his modesty prevents giving him full credit for his scientific interest in our duck population.

TABLE No. 1

	Berthoud			Derby	Hudson	San Luis				Platteville	Present Data		Kennicott		Combined		
	1913	1914	1915			1922	1923	1924	1925		1926	Total	%†	Total	%†	Total	%†
*1 Green-wing Teal	288	351	176	108	42	110	48	92	139	1354	35.0	1	8508	31.5	9862	32.5	
2 Mallard	77	131	190	62	25	96	80	282	93	1036	28.0	2	4087	15.2	5123	16.5	
3 Pintail	6	21	0	33	9	61	41	38	62	271	7.0	5	1738	6.5	2009	6.5	
4 Blue-wing Teal	56	43	33	22	42	27	28	17	16	248	6.5	9	1338	5.0	1586	5.0	
5 Shoveller	0	5	2	19	0	26	19	25	71	167	4.5	7	1572	5.9	1739	5.75	
6 Gadwall	5	9	7	15	9	52	11	37	13	158	4.0	8	1419	5.3	1577	6.0	
7 Canvasback	2	20	0	6	22	13	44	44	5	156	4.0	10	715	2.6	871	3.0	
8 Widgeon	0	17	3	13	5	37	5	59	12	151	4.0	6	1689	6.3	1840	6.0	
9 Lesser Bluebill																	
(Scaup)	1	13	1	67	6	7	18	28	10	151	4.0	11	665	2.5	816	2.75	
10 Redhead	4	12	5	24	5	12	11	4	5	82	2.0	4	1946	7.2	2028	6.5	
11 Golden-eye	3	10	0	4	0	0	0	0	0	17	±	12	327	1.2	344	1.0	
12 Bufflehead	0	0	0	0	0	0	0	0	1	1	±	13	185	0.7	186	0.6	
	—	—	—	—	—	—	—	—	—	—	—	—	3	2614	9.7	2614	8.5
	—	—	—	—	—	—	—	—	—	—	—	—	—	133	0.4	133	±
Total	442	632	417	373	165	441	305	625	427	3792	—	—	26936	—	30728	—	
%*	11.5	16.5	11.0	10.0	4.0	11.0	8.5	16.5	12.0	—	—	—	—	—	—	—	
%†	39.0			10.0	4.0	36.0			12.0	—	—	—	—	—	—	—	

* Standing in abundance.

† Approximately only.

Berthoud, Derby, Hudson and Platteville (near), and the mountain station is in the San Luis Valley. The four plains locations are all within twenty-five miles (air line) of the Rocky Mountain foothills, all having surroundings practically identical with those encompassing the Kennicott station. The San Luis station is in the valley of that name, on the upper reaches of the Rio Grande River, at an altitude of approximately 8,500 feet, and more or less enclosed by lofty mountains.

I am given to understand that the natural food of ducks varies very much at all these stations both as to locality and years. This is a cardinal factor regulating the abundance and the species distribution of our ducks. I have been unable to secure definite information relative to this point of food supply, but wish to call attention to its obvious importance, especially in a semi-arid region such as the western prairies.

It is possible that certain differences in abundance of some species on the various lakes embraced in the five localities under review, when compared with the numbers of the same species at the Kennicott station, may be due to the larger number of years of record at the latter place.

On detailed examination one fact, first of all, stands out most conspicuously, to-wit, however one arranges the data covering the 31,000 ducks now recorded, the Green-winged Teal and the Mallard retain their first and second places in the order of abundance of Colorado ducks. The Ruddy Duck has no position in the present list for none were killed by this hunter, hence the third place in the present list is taken by the next most common duck obtained by this shooter, viz., the Pintail. Nor are Mergansers to be found among the ducks listed in the present study, although hundreds of Ruddy Ducks and Mergansers were seen by my friend, who did not choose to shoot them. We have here a good example of selective shooting, a thing which can patently make a great deal of difference as to our conclusions relating to the frequency of various species.

The number of ducks collected each year by my friend shows a fairly even average. Such departures from the average as may appear probably are due to a different number of days shooting in the various years. On the other hand the shooting of these nine

years occurred in the same months of each year, eliminating the necessity, when drawing conclusions, of reconciling differences which might arise through comparing a month of one year with another month of a second year.

The combined statistics of these two sets of data make more secure the provisional abundance classification as previously calculated in the Kennicott Duck Club study and give one more confidence that the list published in that study can be taken as approximately correct for the past twenty-seven years.

The strikingly smaller number of Redheads shot by my informant during nine years is a surprise; he killed but eighty-two in that time while in nineteen years nearly two thousand were shot at the Kennicott Club. Perhaps this large difference may be accounted for, in part at least, by the fact that it would hardly be possible for one man to kill, in a given time, as many Redheads as could be secured by several men shooting during a similar period. When the numbers of Redheads recorded in the two sets of data are stated in percentages the disparity is not so great as it at first appears, for this species made up 7% of the Kennicott ducks, and 2% of the ducks listed in the present paper.

On the whole the Kennicott, and the present lists run fairly parallel when estimated by percentages.

It has been reported to me several times in past years that Redheads were not so plentiful in the mountains as on the plains; the present study gives me the first tangible evidence that this belief may be correct.

The fact that one shooter, collecting at several different locations, shot, of his total, 3.5% more Green-winged Teals and 12% more Mallards, than did several shooters at one Plains station, seems to demonstrate the irregularity of species distribution on the Plains. In the nine years shooting covered by the data of this paper, maximum shoots of two different species in a given year occurred but three times; the Golden-eye and the Green-winged Teal in 1914, the Bluebill (Scaup) and Redhead in 1919, and the Shoveller and Pintail in 1926. This suggests the idea that conditions leading to duck maxima do not correspond at different stations in the same year. It would seem that some factor or factors caused a simultaneous abundance of two different species at

a given station in 1914, of two other species in 1919, and of yet two other species in 1926; what these factors are is unknown to me, but it is quite evident that conditions, local or general, do not affect all species alike.

Data are available to compare in a given year the ducks shot at the Kennicott, and the other Plains stations only for the years 1913 and 1922; on the Kennicott Lake only thirty-five Blue-winged Teal were shot by all the shooters in those two years, while my informant secured ninety-eight during the same time. The Blue-winged Teal is one of our earliest fall arrivals, a fact which leads me to suspect that the shooting at the Kennicott station may have started later than at other stations or may have been less intense. However, I am unable to furnish any support in favor of either of these ideas. On the other hand more Shovellers and Canvasbacks were killed during these two years at the Kennicott Club than at the other four Plains stations. I have no explanation for these differences.

The data now at my command show very clearly that Colorado ducks are distributed extremely irregularly over the State both in time and place.

By percentages the following species were more abundant at the Kennicott station, viz., Shoveller, Gadwall, Widgeon, Redhead, Golden-eye, and Butterball, while the Green-winged Teal, Mallard, Blue-winged Teal, Pintail, Canvasback and Bluebill (Scaup) were more common at the four other Plains locations.

Obviously three years of shooting at the San Luis Valley location are too few to give large value to any conclusions which might be drawn from the ducks killed during those years, yet in the absence of any other data one may be permitted to draw some tentative conclusions, and point out an interesting fact or two. The large number of Mallards secured in the San Luis Valley is an outstanding surprise; this species is almost 100% more abundant there than is its nearest competitor, the Green-winged Teal, which stands second and the Pintail third in abundance of the San Luis ducks. These positions are quite at variance with the positions of the same species in the list made from the total 31,000 ducks. Three species, viz., the Canvasback, Widgeon, and Gadwall are about equally common in the San Luis Valley,

each representing about 6.5% of all the ducks killed by my informant. The relatively large number of Canvasbacks shot at the San Luis station is of more than passing interest, as it may sustain the contention of some duck hunters that this duck is more common in the "hills" than on the plains; the very low number of Red-heads shot in this valley is another surprise, for but twenty-seven were secured in three years. It would be of importance to determine if this difference between these two species means that one migrates in greater numbers along the mountain range, and the other follows more closely the eastern edge of the foothills. The large number of Canvasbacks seen in the San Luis Valley in 1923, 1924 and 1925 has been attributed by some hunters to an unusually large supply of suitable food present in those years. I am unable to verify this explanation.

The irregularities of duck distribution over Colorado is further shown by the fact that almost double (in per cent) the number of Green-wing Teal were shot at Berthoud, as at the Kennicott station. Of the ducks shot at the San Luis Valley location, 33% were Mallards, which is more than double (by per cent) those shot at the Kennicott station. The Pintail was more common (by per cent) in the San Luis Valley than at any Plains station except Platteville (Milton Duck Club). Estimated on a percentage basis the following species were more common in the mountains than on the Plains, viz., Mallard, Pintail, Gadwall, Canvasback, and Bluebill (Scaup).

Sometime ago I read somewhere that more than a million ducks had been killed in one year in Minnesota alone. Whether this be true or not it is deplorable that all State Game Commissioners are not empowered to compel all licensed gun clubs to keep accurate records of the duck species, their numbers, and dates of shoots. If this could be achieved the data accumulated would make the present statistics on a mere 31,000 ducks pale into dimmest insignificance.

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NEW AND KNOWN FORMS OF THE URAL OWL (*STRIX*
URALENSIS) FROM SOUTHEASTERN SIBERIA,
MANCHURIA, KOREA, SAKHALIN AND JAPAN.

BY TOKU T. MOMIYAMA.

INTRODUCTION. *Strix uralensis* in the eastern parts of the Palaearctic region has been already divided into several local races, but as it never migrates it will be possible to distinguish many more races. From the north border to southernmost Kiusiu, or to Seven Islands of Idzu, all over Japan there are various races of these birds. Of course Japan is not a large country, as all know, but, by the variety of its mountain ranges and by the peculiar extension from north to south, the climate at the same latitude is not always identical. Moreover, by the warm ocean current, some regions near the sea-shore have a comparatively warm climate, or others have the same humidity through the whole year. Therefore it seems to be very difficult to make all the subspecies in Japan belong to the known local races. I therefore indicate some new forms and list the known species from eastern Siberia, Manchuria and Japanese territories and districts.

I am indebted to Dr. Kuroda, Prof. T. Kawamura of Kyoto, Mr. T. Mori of Seoul, Mr. S. Kumagai of Miyagi prefecture, Mr. E. Takahashi of Seoul and Mr. Y. Akasaka of Prov. Tesio of Hokkaido for much kindness and many conveniences in my investigations, for which I am heartily grateful.

LITERATURE CITED.

I have traced the gradual growth of our knowledge of *Strix uralensis* in the regions mentioned, referring to many books and papers which treat of it. I give below the brief notes of the investigators and the summaries of their reports.

1. PALLAS (Reis. Russ. Reichs, i, 1771, p. 445) proposed for the first time, the name of *Strix uralensis*, for the Ural Owl, but he did not divide further, including all the forms of Europe and Asia under this single name.
2. TACZANOWSKI (Fauna Orn. Sib. Orient., 1891, p. 138) reported on *Strix uralensis* from eastern Siberia.

3. TEMMINCK AND SCHLEGEL (Siebold's Fauna Japonica, Aves, 1847, p. 30) indicated the Japanese Owl as *Strix fuscescens* (*Strix rufescens* in the Text, is preoccupied by *Strix rufescens* of Horsfield, 1822). Afterwards, by some ornithologists of the later generations, the range was confined to Kiusiu.
4. WHITELY (Ibis, 1867, p. 194) examined the Hokkaido form and said, "The typical form of the Ural Owl probably breeds in Yesso."
5. BLAKISTON AND PRYER (Ibis, 1878, p. 246) reported on *Syrnium rufescens* from Hokkaido and Hondo.
6. SEEBOHM (Ibis, 1879, p. 41) named a specimen sent from Hokkaido *Strix uralense*, subspecies *fuscescens*, characterized by being paler and duller as compared with the typical *Strix uralensis*.
7. BLAKISTON AND PRYER (Ibis, 1880, p. 172) reported again on *Syrnium rufescens* telling about the eggs and nest, and added that the color of the feathers was paler than that of the southern races.
8. NIKOLSKI (Sapiski Imperatorskoi Akademii Nauk. Sankt-Peterburg, 1889) described *Syrnium uralense* from Sakhalin under the subject of 'Island Saghalin and its fauna,' saying as follows, "une colorasion un peu plus foncee."
9. M. NAMIYE (Dobutsu Zasshi, i, 1889, p. 370) named the Hatidio-sima form "Fukuro," in Japanese, but not in Latin, in "Notes on some birds from the islands of Idzu." He seems to have observed it only.
10. SEEBOHM (Birds of the Japanese Empire, 1890, p. 185) divided the Japanese Owls into two forms,—one was *Strix uralensis* and the other, *Strix uralensis fuscescens*, restricting the range of the typical form to Hokkaido and Yokohama, and that of the latter to Nagasaki.
11. N. OKADA (Catalogue of Vertebrated Animals of Japan, 1891, p. 111) reported on '*Syrnium uralensis rufescens*, Fukuro,' limiting the range to Tokyo, Hatidio-sima, Satuma and Tikuzen.
12. DR. I. IJIMA (Dobutsu. Zasshi, iii, 1891, suppl., p. 15) indicated *Strix uralensis* and *Strix uralensis fuscescens*. He named the latter 'Kiusiu Ural Owl' in English.
13. DRESSER (A Manual of Palearctic Birds, pt. I, 1902, pp. 477-478) confined the distribution of *Strix uralensis* to Europe, Siberia, Manchuria, Korea and Japan.
14. DR. I. IJIMA ('Hogo-tyo Zufu,'¹ Revised, 1905, p. 56) decided that the Hondo and Hokkaido forms belonged to *Strix uralensis*, stating however, that the Kiusiu form was paler and somewhat smaller. In this I think there may have been some mistake.
15. S. HATTA & S. MURATA (Journ. Sapporo Nat. Hist. Soc., i, No. 1, 1905, p. 62) indicated the Hokkaido form as *Strix uralensis* in 'A preliminary list of the birds of Hokkaido.'

¹ Trans. Short Notes & Figures of Protected Birds in Japan.'

16. M. OGAWA (Annot. Zool. Japan., vi, 1908, pp. 378, 379) recorded *Strix uralensis* and *Strix uralensis fuscescens* in 'A Hand-list of the Birds of Japan,' saying that the former lived in 'Hokkaido, Yokohama, Nagasaki, Musasi, Suruga,' and the latter, in Kiusiu.
17. BUTURLIN (Journ. f. Orn., 1907, pp. 333, 334) separated a new subspecies, *Strix uralensis nikolskii* of southeastern Siberia from the western form.
18. CLARK (Proc. U. S. Nat. Mus., XXXII, 1907, pp. 4171-4172) indicated two new subspecies from Japan, namely, *Syrnium uralense japonicum* from Jesso, and *Syrnium uralense hondoense* from Hondo, the type-locality being Iwaki.
19. DR. LÖNNBERG (Journ. Coll. Sci., Imp. Univ. Tokyo XXXIII, Art. 14, 1908, p. 45) examined the form of Toyohara ("Vladimirofska") in Sakhalin and looked upon it as *Syrnium uralense*. He noticed that the color was extremely pale.
20. DR. HARTERT, (Vög. Paläarkt Fauna, II, pp. 1020-1021, 1913) indicated the following forms; *Strix uralensis nikolskii* from Sakhalin, *Strix uralensis japonica* from Hokkaido, *Strix uralensis hondoensis* from Hondo, *Strix uralensis fuscescens* from Kiusiu.
21. S. MURATA (Karafuto Dobutsu-tyosa Hokoku,¹ 1914, p. 45) recognized the Sakhalin form as *Strix uralensis*. He would be probably careless as to the subspecies.
22. S. UCHIDA (Birds of Japan, II, 1914, pp. 348-349) considered the forms in all the regions extending from south of Sakhalin to Hondo, as *Syrnium uralensis*, which, including the Kiusiu and Awaji forms, wholly resembled the form of Europe.
23. N. KURODA (Seu-man tyo-rui Japan,² 1917, suppl., p. 130) stated that, according to Dresser, *Strix uralensis* lived in Korea and Manchuria, and that if so, it must be probably the form known as *Syrnium uralense nikolskii*.
24. PRINCE N. TAKA-TSUKASA (Dobutsu. Zasshi XXX, 1918, p. 443³ Prince Taka-Tsukasa) observing a specimen from Kagosima prefect. in south Kiusiu, considered it a melanistic *Syrnium melansis* (misprint for *uralensis*) *fuscescens*.
25. N. NOMURA & TOKU T. MOMIYAMA (Saitama-ken Iruma-gun san Tyorui,³ Tori, i, No. 8, 1919, pp. 183-184) reported that *Strix uralensis japonica* was found in Hokkaido and northern parts of Hondo; *Strix uralensis hondoensis*, in southern parts of Middle Hondo; and both subspecies, in Saitama prefect. near Tokyo.
This is conclusively wrong. *Strix uralensis japonica* from northern districts of Hondo must be corrected to *hondoensis*, and *Strix uralensis hondoensis* from southern districts of Hondo, to *Strix uralensis media* which is here separated as new.

¹ Trans. 'Reports on Fauna of Saghalin Island.'

² Trans. 'Notes on the Birds of Korea and Manchuria.'

³ Trans. 'Notes on Some Birds from Iruma-gun, Prefect. Saitama.'

26. TOKU T. MOMIYAMA (Fukuro-rui Zakki,¹ op. cit., i, No. 10, 1920, p. 310, Text fig. 48) observing three specimens from northern regions in Korea, recognized that they were smaller than *Strix uralensis nikolskii* and distinguishable from *Strix uralensis japonicus* by being paler and duller.
27. TOKU T. MOMIYAMA (Fukuro-rui Zakki, op. cit., i, No. 10, 1920, p. 311) examining a specimen from the vicinity of Tiba,—which he had recognized as *Strix uralensis japonicus*,—reported that this was wrong, and that the form resembling *hondoensis* was found so far as Tiba prefecture.
28. S. UCHIDA (Hand-List Jap. Bds., 1922, p. 101) divided *Strix uralensis* into the following four forms from Japan.
Strix uralensis nikolskiiSiberia-fukuro.
 Hab. Sakhalin, ? Korea.
Strix uralensis japonicaYesso-fukuro.
 Hab. Hokkaido, Hondo.
Strix uralensis hondoensisFukuro.
 Hab. Hondo.
Strix uralensis fuscescensKiusiu-fukuro.
 Hab. Awaji, ? Sikoku, Kiusiu.
29. S. UCHIDA (Bds. of Jap., Revised Ed. II, 2, 1923, pp. 406-407) distinguished four subspecies as before, but corrected the ranges of *japonica* and *hondoensis* saying that the former lived in Hokkaido and northern Hondo, and the latter in Middle Hondo.
30. T. MORRI (Catalogue of Specimens at the exhibition of specimens of the Natural History of Chosen, 1923, p. 38) recognized the Korean form as *Strix uralensis nikolskii*, but probably he had not seen a specimen.
31. N. KURODA (A New Owl from Hondo, 1924, pp. 1-2) named the form of the Pacific side of Japan *Strix uralensis pacifica*, indicating Idzu in Suruga, etc. as the type locality. He continued, 'The range of distribution of the form may probably coincide with that of *Graphophasianus soemmerringii subrufus*. Specimens from Provinces Totomi, Mikawa etc. belong to *hondoensis* rather than to this form.'
- Although being somewhat difficult to exactly understand, yet, the above-mentioned explanation would seem to be wrong. Was it not *Strix uralensis media* Momiyama? Would it not be unsuitable to confine the type locality to such a peculiar district, the northernmost limit of *S. u. pacifica* as Idzu Peninsula?
32. HON. MASA U. HACHISUKA (Comp. Hand-list Bds. Jap. & Brit. Is., 1925, p. 39) reported four subspecies as did Mr. Uchida but had not seen the short note of Mr. Kuroda.

¹ Trans. 'Notes on Some Strigidae.'

33. DR. S. UCHIDA (Bds. Jap., Revised Ed. IV., 2, 1926, pp. 362-364) joined *Strix uralensis pacifica* to the four subspecies which he reported in (29), remaining the distributions as before, but indicating that of *pacifica* only as Idzu and Suruga on the Pacific side of Middle Hondo.
34. TOKU T. MOMIYAMA (Four new subspecies of Korean birds, Journ. Chosen Nat. Hist. Sci. No. 4, 1927, p. 1) reexamined the specimen cited in (26), and named the form from the vicinity of the north border of Korea *Strix uralensis coreensis*.
35. DR. S. UCHIDA (Bds. Jap., Revised Ed. IV, 3, 1927, p. 217) reported on the Korean form saying that the wing was shorter compared with that of birds from south-eastern Siberia and Sakhalin Island. He added that though it might be a new subspecies, so few examples could not exactly illustrate it. Probably he did not pay any attention to the note written in (34).
36. DR. N. KURODA (Uchida's Bds. Jap., Revised Ed. IV., 3, 1927, suppl. p. 8) named the Korean form "*Strix uralensis* [*? nikolskii*]." He also seemed not to have seen the above cited note.
37. TOKU T. MOMIYAMA (Bull. B. O. C., XLVIII, pp. 21, 1927) has recently separated three new subspecies from Japan as follows:
Strix uralensis latibanai from Sakhalin.
Strix uralensis morii from Korea.
Strix uralensis nigra from S. Kiusiu.

LIST OF SUBSPECIES.

(1). *Strix uralensis nikolskii* (Buturlin)

(Japanese name: AMUR-FUKURO)

Syrnium uralense nikolski Buturlin, Journ. f. Orn., 1907, pp. 333, 334:
South-eastern Siberia.

The head, hind-neck, back and wings are striped with a little ashy brown and pale white. In general, the color of the feathers on all the parts is somewhat indistinct and duller. The wing is considerably larger on the average. Wing 330-350 mm.

Distribution: Southeastern Siberia, Amur Land, Sikhota Mts., Prov. Ussuri.

Note.—This follows the description of Hartert. I think the Sakhalin form, though it was considered as *nikolskii* by him, must be intermediate between *nikolskii* and *japonica*.

(2). *Strix uralensis coreensis* Momiyama

(Japanese name: KORAI-FUKURO)

Strix uralensis coreensis Momiyama, Journ. Chosen Nat. Hist. Soc., No. 4, 1927, p. 1: Tai-an-san, N. Kankyo district, Korea.

The whole plumage is buffy brown not mixed with sepia. The head, facial disk, wings and under surface have a slightly buff tint. All the wing-coverts are paler sepia with ashy, or buff-brown. The tail is duller, the primaries are not striped with a brownish band. The wing averages large, though much shorter than *S. u. nikolskii*.

Measurements wing. ♂ 293 mm., ♀ 317-318 mm. Tail. ♂ 209 mm., ♀ 215-250.5 mm.

Distribution.—Probably confined from northernmost Korea to Changpai Mts. in South Manchuria.

(3). *Strix uralensis jingkou* Momiyama, sub. sp. nov.

(Japanese name: NAN-MAN-FUKURO)

Similar to *S. u. coreensis*, but differs in being mottled with a deeper, brownish color. The white parts of webs almost indistinct except on the head and under surface. The forehead, back and wing-coverts rich dark brown. The wings and tail are also darker, more clearly striped with narrower, grey, and brownish white.

Measurements.—Wing 312-322 mm., tail 209-235 mm.

Type in Athenæi Ornithologici Momiyamici unsex. Yingkou, Shing King Shong, Manchuria 9th March, 1927. Provisional No. 27. Sent by I. Iwai.

Material examined.—Two specimens from the same locality.

Distribution.—South-eastern Manchuria.

Note.—The bird which the following sentence indicates will probably belong to this race. "Die Abbildung von, *Ptynx fuscescens*," nacheinem Stüke von Peking in Pariser Museum [David & Austalet, Ois. Chime, Atlas Taf. 2, s. Text p. 45] erinnert am meisten an *S. u. hondoensis*. Wenn Buturlin (Journ. f. Orn. 1907, p. 332).

(4). *Strix uralensis morii* Momiyama

(Japanese name: SIRAGI-FUKURO)

Strix uralensis morii Momiyama, Bull. B. O. C., XIVIII, p. 21, 1927. Vicinity of Seoul, Keiki Distri., Korea.

Distinguished from *S. u. jingkou* by being darker and less yellowish brown. Compared with the dark phase of *S. u. tatibanaï* richer brown, but less greyish brown. The feathers of both forms are mottled in the same manner. The wing-coverts, under surface and feathers of feet and toes are evidently more buffish brown. Wing 326-330 mm., tail 230-254 mm.

Distribution.—Probably confined within Korea except the northernmost districts.

(5). *Strix uralensis tatibanai* Momiyama

(Japanese name: KITA-FUKURO)

Strix uralensis tatibanai Momiyama, Bull. B. O. C. XLVIII, p. —, 1927: Keson, Siska Prefect-Distri., S. Sakhalin.

Readily distinguished by the smaller size from *S. u. nikolskii*. The dark phase is near to *S. u. japonica* of Hokkaido, but differs in having the upper surface paler and less tinged with ochre. The size is larger. Wing, ♂ 316–321 mm., ♀ 328–338. Tail, ♂ 241–249 mm., ♀ 248.5–260 mm.

Distribution.—Sakhalin Island.

(6). *Strix uralensis japonica* (Clark)

(Japanese name: EZO-FUKURO)

Syrnium uralense japonicum Clark, Proc. U. S. Nat. Mus., XXXII, 1907, p. 471: Hokkaido.

Very similar to *S. u. tatibanai*, but distinguished by having on the whole surface less white or buffy white, almost covered with paler buffy brown with less grey, particularly, from the forehead to over the head, under surface and lower surface. In size, the wing and tail decidedly shorter. Wing, ♂ 267 mm., ♀ 295–313 mm., tail ♀ 201–235 mm.

Distribution.—Confined within Hokkaido.

(7). *Strix uralensis hondoensis* (Clark)

(Japanese name: IWAKI-FUKURO)

Syrnium uralense hondoense Clark, Proc. U. S. Nat. Mus., XXXII, 1907, p. 472: Prov. Iwaki, northern Hondo.

More buffish brown, compared with *S. u. japonica*, including very little ash-color. The upper surface, wings and wing-coverts are all covered with somewhat rich brown except white spots. The face is also a little dark brownish. The tip of feathers on the head, back and rump are tinged with paler buff. Wing, ♂ 302–317 mm., ♀ 319–340 mm., tail ♂ 223.5–242 mm., ♀ 224–244 mm.

Distribution.—Provs. Mutu (Prefect Awomori), Rikutu (Prefect. Iwate), Rikuzen (Prefect. Miyagi), Uzen (Prefect. Akita), Ugo (Prefect. Yamagata), Iwaki & Iwasiro (Prefect. Fukushima), Simotuke (Prefect. Totigi), Etigo (Prefect. Niigota).

(8). *Strix uralensis media* Momiyama, subsp. nov.

(Japanese name: FUKURO)

Clearly distinguished from *S. u. hondoensis* by having the feathers of a rich deeper brown or rather blackish brown tinged with ochre. Especially, the head, back, wings and wing-coverts. The white parts of feathers on the upper surface seem to be paler, brownish spots. The face is comparatively dark brown. The under surface and flanks are pale brownish buff mottled with white and blackish brown.

Measurements. Wing, ♂ 306–322 mm., ♀ 325–347 mm., tail ♂ 220–229 mm., ♀ 227.5–242.5 mm.

Type in Athenæi Ornithologici Momiyamici. ♂. Kamatari-mura, Kimitu-gun, Prov. Kazusa. January, 1923. Provisional No. x. 40. Sent by Mr. C. Saito.

Material examined. Nine males and eight females.

Distribution.—Middle Hondo and Coast of Japan Sea in western Hondo except westernmost districts; Provs. Musasi (Prefect. Tokyo & Saitama), Sinano (Prefect. Nagano), Ettu (Prefect. Toyama), Sagami (Prefect. Kanagawa), Yamasiro (Prefect. Kyoto), Wakasa (Prefect. Fukui), etc.

The birds of Prefects. Kyoto & Osaka are the intermediate form between *S. u. media* and *S. u. pacifica*.

Note.—Dr. Kuroda separates *S. u. pacifica* from *S. u. fuscescens* in his paper entitled "On An Apparently New Form of Ural Owl from the Pacific Side of Hondo, Japan," and says as follows. 'A single male (somewhat abraded) from Prov. Suruga has rather paler back than *S. u. pacifica*, female, but the underparts nearly as buffy as in the type, unlike those of *hondoensis*.'

It is doubtful, from my own observation, that the Suruga form belongs to *S. u. pacifica*, for it is very different in its colour, being nearest to *S. u. media*. The form must be intermediate between *pacifica* and *hondoensis*, and can be said to belong to *media*.

(9). ***Strix uralensis pacifica*** Kuroda

(Japanese name: IDZU-FUKURO)

Strix uralensis pacifica Kuroda, 'A New Owl from Hondo.' 1924, p. 1: Prov. Idzu, Mid. Hond.

Nearest to *S. u. media*, but has a remarkable character in its color. Strictly speaking, it seems to be very slightly duller blackish brown with less white, like *S. u. fuscescens*. The whole feathers are tinged with dark rusty or pale yellowish brown. The facial disk and abdomen are mottled with buff, dark brown and duller yellowish white.

Measurements. Wing ♂ 301 mm., ♀ 320 mm., tail ♂ 223–232 mm.

Distribution.—Idzu Peninsula, Western Hondo exclusive of the districts that face the Japan Sea (Prov. Ise, Kii, Yamasiro, Kawati), Awaji, Sikoku Island.

(10). ***Strix uralensis fuscescens*** Temminck & Schlegel.

(Japanese name: KIUSIU-FUKURO)

Strix rufescens Temminck & Schlegel, Fauna Japan Aves, p. 30, 1847: Japan. Restricted typical locality Kiusiu (non *Strix rufescens* Horsfield, Trans. Linn. Soc. London, XIII, p. 140, 1822).

Strix fuscescens Temminck & Schlegel, op. cit., pl. 10, 1847: Japan. Restricted typical locality Kiusiu.

Separated from *S. u. pacifica* by being deeper brown with less buffy parts and least white, rather more like dull sepia. The feathers of the head and wing-coverts are tinged with dark buff. The face and lower parts are darkest brown. The under surface is mottled with darker buff and blackish brown. Wing, ♂ 311 mm., ♀ 315-330 mm., tail ♂ ♀ 232 mm.

Distribution.—Probably confined within northern Kiusiu.

(11). *Strix uralensis* subsp. nov.

(Japanese name: HATIDIO-FUKURO)

'Fukuro' Namiye, Dobutsu Zasshi, i, 1889, p. 370, Hatidio-sima, Seven Islands.

I have not any specimen, but once observed an Owl in Hatidio-sima. Clearly distinct from *S. u. pacifica* Kuroda, and resembling *S. u. fuscescens* or, rather it may be considered to be nearest to *S. u. nigra*.

Distribution.—Hatidio-sima, Seven Island and thereabout.

(12). *Strix uralensis nigra* Momiyama

(Japanese name: OHSUMI-FUKURO)

Strix uralensis nigra Momiyama, Bull. B. O. C., xlviii, p. 21, 1927: Prov. Ohsumi, S. Kiusiu.

Peculiarly deeper, darker sepia than *S. u. fuscescens* of northern Kiusiu. The whiter, paler, sepia of feathers barely indicated. The face, hind-neck, head, back and wing-coverts remarkably blackish sepia. Wing, ♀ 326 mm., Tail 229 mm.

Distribution.—Southern districts of Kiusiu.

The measurements of all the forms of *Strix uralensis* are shown below for easy comparison:—

	Wing mm.	Tail mm.
<i>S. u. nikolskii</i>	326-350	
<i>S. u. coreensis</i>	293- 218 318	209-250.5
<i>S. u. jingkou</i>	312-322	209-235
<i>S. u. morii</i>	326-330	230-254
<i>S. u. tatibanai</i>	316-338	241-260
<i>S. u. japonica</i>	259-313	201-235
<i>S. u. hondoensis</i>	302-340	223.5-244
<i>S. u. media</i>	306-347	220-242.5
<i>S. u. pacifica</i>	299-320	207-232
<i>S. u. fuscescens</i>	311-330	232
<i>S. u. nigra</i>	325-326	229

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9th August, 1927.

NESTING AND LOCAL DISTRIBUTION OF THE HOUSE
WREN (*TROGLODYTES AËDON AËDON*).¹

BY S. PRENTISS BALDWIN AND W. WEDGWOOD BOWEN.

THE researches on the matings and returns of House Wrens which have been carried on at Hillcrest Farm in Gates Mills, Ohio, since the summer of 1915, have already led to a number of interesting discoveries. That House Wrens not infrequently change mates between first and second broods has already been pointed out,² and much confirmatory data has since accumulated. Polygamy, as a possibility, was suggested earlier³ and is now definitely known to occur, though infrequently. Many Wrens have returned year after year to nest in the same locality, thus making possible the compilation of long and intricate genealogical trees (fig. 1), yet strangely, out of the many broods of nestlings banded each season, but few have returned to breed in succeeding years. Juvenile mortality must indeed be heavy, yet assuming that the species remains numerically constant, a larger percentage of survival is to be expected than is indicated by actual returns. To what extent do the nestlings of a previous year scatter for breeding purposes in succeeding years? In the hope that some light might be thrown on such questions as this, an extension of the field of investigation was planned for the summer of 1926 and Mr. Rudyerd Boulton, then assistant in the Baldwin Bird Research Laboratories, was appointed to extend activities on a much larger scale than heretofore. Mr. Boulton's place was taken by the junior author during the succeeding season, and plans for continuation of this line of investigation during future years are contemplated.

While, for reasons whose probable explanation is given later, it is impossible at the present time to conjecture much upon the main object of these investigations, a number of side issues have arisen, the discussion of which forms the basis of this paper.

¹ Contribution No. 13, from the Baldwin Bird Research Laboratory.² Auk, 1921, pp. 237-244.³ Ibid, pp. 238-239.

1919		1920		1921		1922		1923
PARENTS	YOUNG	PARENTS	YOUNG	PARENTS	YOUNG	PARENTS	YOUNG	
				21211 ♂	21246- 21251	26601 ♂	26660- 26663	
				21231 ♂		22969 ♀	26534- 26536	
45342 ♂	MALE NEST							
45302 ♂	45304- 45310	45956- 45961		48782- 48787			22996- 23000	
45303 ♀	45374- 45380	46061- 46067		21206 21293			26648- 26652	
45349 ♂		46052- 46055	45963 ♀	21255- 21237		26638 ♂		
		46006 ♀		21212 ♀		48785 ♂	26624- 26627	
		45988 ♀				26520 ♀		
		45795 45799					♂ (DIED)	
45335 ♂	45336- 45341	45963- 45968		21241- 21245				
45334 ♀		45955 ♀		21208 ♀		26512 ♂	26513- 26516	
		46032 ♂						
45322 ♂?	45325- 45331	45325 ♀	21299- 21300				26653- 26658	
45324 ♂?		46074- 46079				?		
		45968 ♂						

FIG. 1. GENEALOGICAL TREE OF HOUSE WRENS; NUMBERS IN CIRCLES INDICATE FIRST AND SECOND BROODS.

METHOD OF INVESTIGATION

Nesting boxes of suitable dimensions, designed in a manner enabling them to be opened readily for examination, were used. To each was fitted a trap-perch of simple design. One hundred and eight of these boxes were erected in suitable locations during the summer of 1926, and an additional 56 in 1927. The choice of location was at first largely haphazard. Barns, houses, telephone poles, trees and other likely places were selected, but later, as the Wrens arrived an attempt was made to provide a box wherever a Wren was seen or heard, and as far as possible the number of boxes was kept in excess of those occupied.

Each box, identified by a number, was visited at frequent intervals and notes were made upon nesting activities within. The interval between such visits was at first short, but, with the increase in quantity of boxes, it grew to be about a week, and as

nearly as possible thereafter each box, empty or occupied, was visited once a week during the entire nesting season. The parents were trapped and identified with Biological Survey bands. By close observation it was possible in almost every case to distinguish the sexes, for the behaviour of the two parents is somewhat different and, moreover, it was the usual practice to capture the female while incubating. At some time during the second week after hatching, by which time their legs had obtained the maximum of growth, the young were banded also.

It was found that Wrens usually sought boxes of the Baldwin Laboratory type in preference to others of less suitable dimensions, but, in order that the survey might be as complete as possible, all boxes belonging to estate owners within the territory were kept under observation. A few Wrens are wont to seek deserted Woodpeckers' holes, or crevices in rotten stumps, in which to build their nests. These sometimes occasioned difficulty, but, thanks to the untiring song of the male, the locations of such nests were usually soon discovered. To facilitate the observations on, and the capture of the parents in such "wild" nests, boxes of the type described above were erected as close to the entrance holes as possible, and, when the eggs had hatched and the young were old enough to call for food, the entire nests were transferred to the boxes. On no occasion did such seemingly drastic measures harm, or interrupt the ultimate exit of the young from the nest at the appointed time.

With such methods as these it is believed that a reasonably comprehensive and thorough survey has resulted.

A few Wren nests undoubtedly escaped observation, but their number, it is felt was too small to influence the mass of information compiled.

THE AREA SELECTED.

The western side of the Chagrin Valley, some fifteen miles east of Cleveland, Ohio, where the present study is being made, consists mainly of a number of large estates. Nestling close to the river is the village of Gates Mills with the usual assemblage of dwellings and small outlying farms. To the larger estates our attention was first directed, and, thanks to the generous support and interest of estate owners and their superintendents, free

access to all parts of the area was made possible. Later, when activities were pushed further into the heart of the village our intrusions here also met with similar cordiality and encouragement.

The Chagrin River runs almost due north to Lake Erie through an open valley some 300 feet below the level of the surrounding plain. Slightly more than half of the selected territory lies between the 1050 and the 900 foot contour lines. Then with a sudden drop, in many places precipitously, the land falls off to 800 feet above sea level, after which the decline is less and less pronounced until at slightly less than 750 feet the river's edge is reached. For the purpose of this study it is convenient to divide the territory into the following three areas:—

- (a) an upper, plain area—above the 900 foot contour line.
- (b) an intermediate, cliff area—between the 900 and 800 foot contour lines (dotted on the map, fig. 2).
- (c) a lower, valley area—below 800 feet.

These may be considered in more detail:—

(a) *The upper, plain area*.—Roughly about half of this area is more or less heavily wooded (cf. figs. 2 and 3), and so is environmentally unsuited to the breeding habits of the House Wren, but a few clearings for residences are of sufficient size to attract Wrens and nesting boxes were there erected. For the remainder, the distribution of nesting boxes was confined to the more open parts of the area. Four large estates, of which the senior author's is one, are included in this area, all being situated near to the 900 foot contour. An ample supply of boxes was here erected, those on the senior author's estate having been in place for many years. The remaining portion of the open country consists of level grassy plains with a scattering of dwellings, small farms and orchards. Boxes were freely distributed in likely places, chiefly on, or near to, residences and barns.

(b) *The intermediate, cliff area*.—For the most part this consists of more or less precipitous slopes, thickly vegetated. But few boxes were erected here, and these were confined chiefly to clearings and the neighborhood of dwellings.

(c) *The lower, valley area*.—Very little of the tree-belts extend into this area, and most of the large estates, with formal gardens, orchards, and lawns scattered thinly with trees are here located.

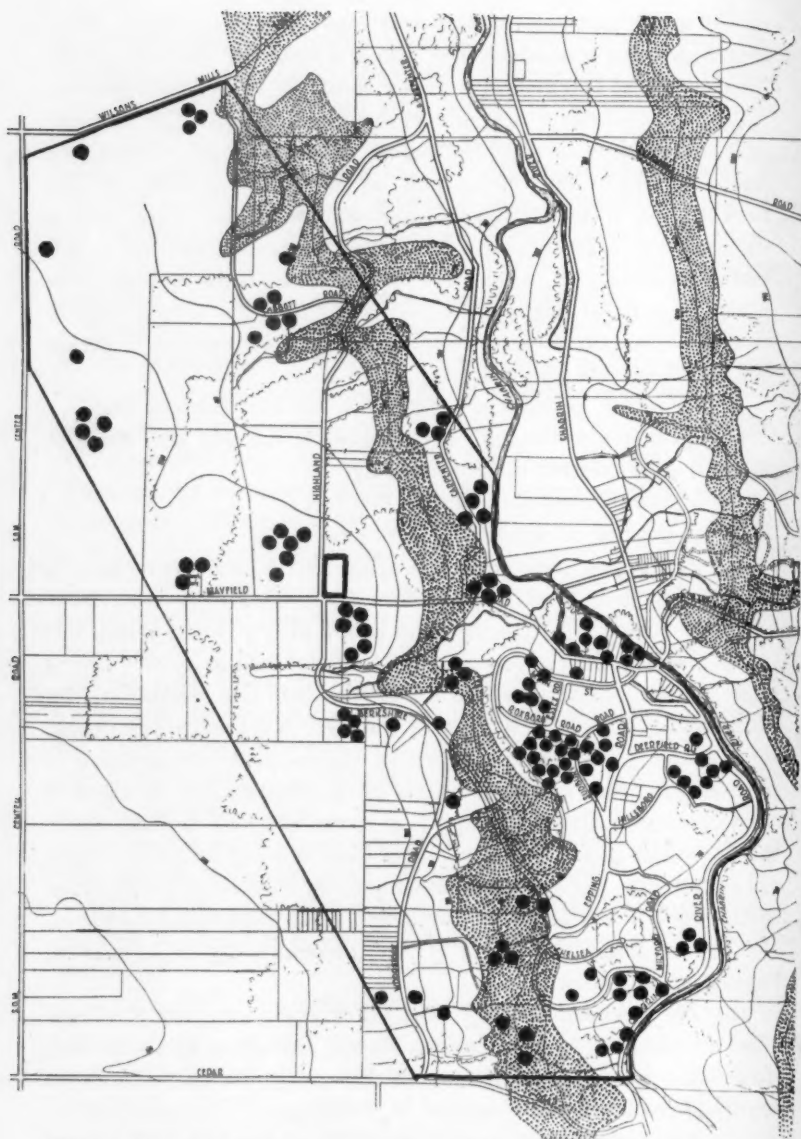


FIG. 2. DISTRIBUTION OF NESTING BOXES AS TO ALTITUDE: UPPER PLAIN AREA TO LEFT CLIFF AREA, DOTTED, AND VALLEY AREA TO RIGHT.

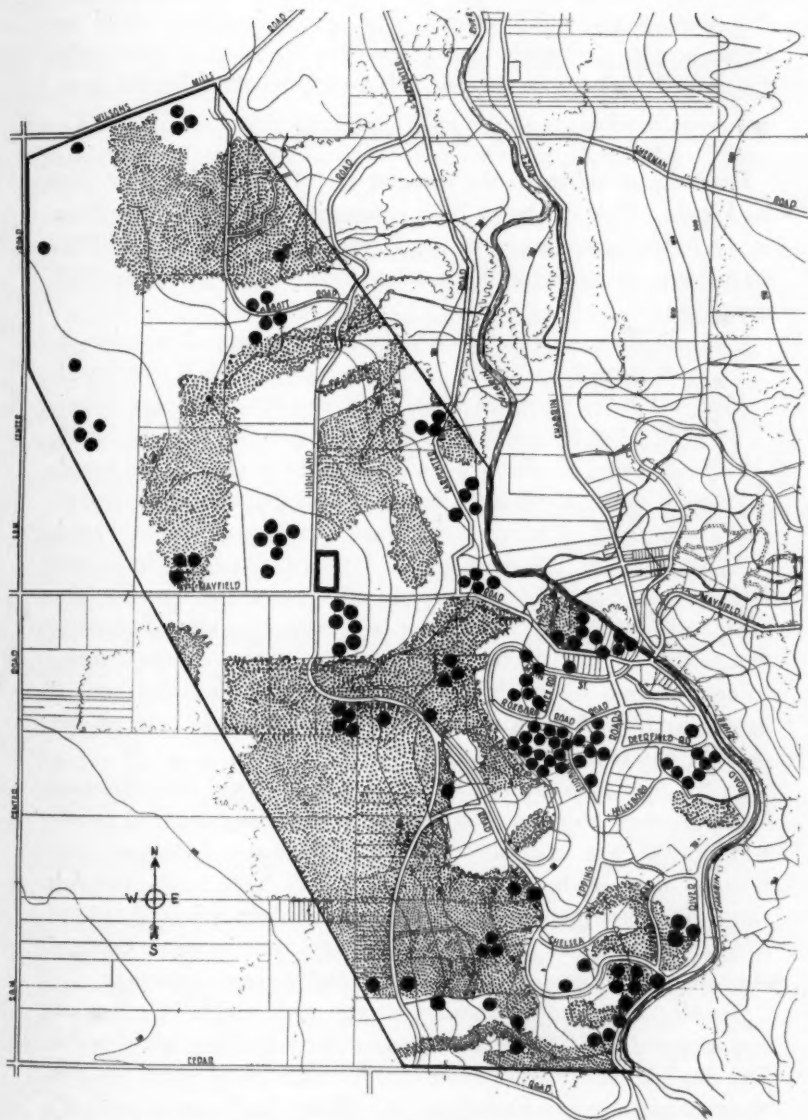


FIG. 3. DISTRIBUTION OF NESTING BOXES AS TO TREE BELTS (DOTTED).

The area, although open, is therefore considerably different from the open grassy plains above. The many dwellings afford an ample supply of suitable nesting sites for Wrens, and boxes were distributed freely. To the east this area is bounded by the river.

THE SEASON OF 1926.

For reasons unknown the summer of 1926 proved a poor year for Wrens. This is shown by a comparison of the figures given in the following summary of the Wrens that have nested at Hillcrest Farm, the senior author's estate, during the years 1921-1927 inclusive.

1921—9 pairs, of which 7 had two broods, and 2 one brood.

1922—9 pairs, of which 6 had two broods, and 3 one brood.

1923—11 pairs, of which 3 had two broods, and 8 one brood.

1924—9 pairs, of which 4 had two broods, and 5 one brood.

1925—8 pairs, of which 5 had two broods, and 3 one brood.

1926—5 pairs, of which 1 had two broods, and 3 one brood.

1927—9 pairs, of which 2 had two broods, and 7 one brood.

Early in June 1926, two female Wrens arrived on the estate. Both mated, but only one brought off a successful brood. The other was found dead near its nest box a few days after its arrival. Not until July, by which time the solitary pair were about ready to commence a second brood, was the Wren population swelled by the arrival of three more females, each of which mated and brought successfully to a climax its single brood.

In the field note book of this year it is observed that the dead female showed no signs of injury or other violent cause of death, and disease was suggested as a possible cause. Perhaps here lies the clew; some infectious disease may have swept through the entire Wren population while in its southern winter quarters. We cannot tell, but inquiries have shown that in many parts of their breeding range Wrens were unusually scarce this year.

Turning now to the extended survey with which Mr. Boulton was engaged in 1926: only 24 females were banded, six of which had two broods. Fifteen additional females, ten of which deserted their nests, escaped identification. These latter were probably many of them the same birds that were identified elsewhere. The total number of females on the whole area was probably somewhere in the neighborhood of 30.

Of the males, 21 were banded. Owing to their habit of putting sticks into two or three neighboring boxes, as well as to the fact that many are irregular, or neglectful of their parental duties, capture for identification is often impossible. It is probable however that the sexes were represented in about equal numbers.

Of the total 45 birds identified, three were returns from previous years, banded, of course, on the senior author's estate. They were:—

A—50, ♂, banded in 1924, nesting in 1926 about $\frac{1}{3}$ mile away.

31980, ♂, banded in 1925, nesting in 1926 about 2 miles away.

A—129, ♀, banded in 1924, nesting in 1926 about $\frac{1}{3}$ mile away.

A total of 157 young were raised successfully during the season.

One hundred and eight boxes were available. Thus the area was fairly well covered, but some blank spaces remained. Thirty-eight of the boxes were not even visited by birds during the entire season, and a number of others were visited only by male Wrens at sparse intervals.

A comparison of the above data with those given below for the season of 1927, illustrates sufficiently the abnormal scarcity of Wrens throughout the territory during 1926 and the consequent reason why it is unsafe, for the present, to speculate on the expected returns of either nestling or adults in the succeeding summer.

THE SEASON OF 1927.

Besides the boxes erected in 1926, of which 96 remained, a further 20 were added in early spring, making a total of 116 available at the beginning of the season. Later more were added to fill gaps here and there when indicated. Thus it is felt that with but one exception, the entire area was from the start thoroughly covered. The exception was a small area near the river at the southeastern extremity of the territory which was brought under observation too late to include first broods. Besides our own boxes there were, scattered throughout the territory, a number of Wren boxes belonging to residents and estate owners. These were kept under observation too, and 28 were occupied by Wrens during the season.

The Wren Population.—The numbers of Wrens nesting in the territory were as follows:—

Females

Newly banded	69
Returns from previous years	11
Unidentified (some possibly duplicated)	12
Total probably between 85 and 90	

Males

Newly banded	54
Returns from previous years	11
Unidentified (many probably duplicated)	57
Total probably about 90	

This is approximately three times the population of the previous season, and represents probably about the normal density, as is indicated by the summary of Wrens nesting at Hillcrest Farm during the past seven years (see page 192).

Returns from previous years.—Not one of the twenty-two returns had been banded earlier than the preceding year. This, in itself, is suggestive of a previous calamity especially when we look back for comparison to the records of earlier years (cf. fig. 1). Five of these returns were banded in the nest in 1926 and returned as follows:—

- 1 male to immediate vicinity of original nest
- 1 male and 1 female to within $\frac{1}{3}$ mile of original nest
- 2 females to within 1 mile of original nest

The remaining 17 adults of the previous season returned as follows:—

9 males and 5 females to immediate vicinity of previous year's nesting site.

- 1 female to within $\frac{3}{4}$ mile of previous year's nesting site.
- 1 female to within 1 mile of previous year's nesting site.
- 1 female to within $1\frac{1}{2}$ mile of previous year's nesting site.

The tendency of the female to stray further than the male is striking though not surprising since it is the male who selects the territory in advance of his mate.

In one instance the same pair mated together for their first broods in the same locality both years, but took new mates for second broods each time:

Number of nests and offspring.—Discounting male nests, a name given to nests in various stages of completion, built by the male as accessories to the one occupied by his mate, as well as to

those built by unmated males, there were 104 nests under observation within the territory, and from these 86 broods flew. These may be classified as follows:—

First broods—54, of which 49 were successful.

Second broods—50, of which 37 were successful.

The total number of eggs laid by all the females under observation was 581. Of these:—424, or about 73% hatched, and 390, or about 67% left the nest as normal young. The remaining 33% perished at one stage or another.

Average number of eggs per female.—Of 21 pairs of Wrens which had both broods under observation, the average number of eggs laid was:—6 eggs to the first brood, and 5.5 eggs to the second brood.

Of nineteen pairs, known to have had but one brood, the average number of eggs laid was 6.3 per female.

PERIODS OF NESTING ACTIVITIES OF HOUSE WRENS
GATES MILLS, OHIO - 1927

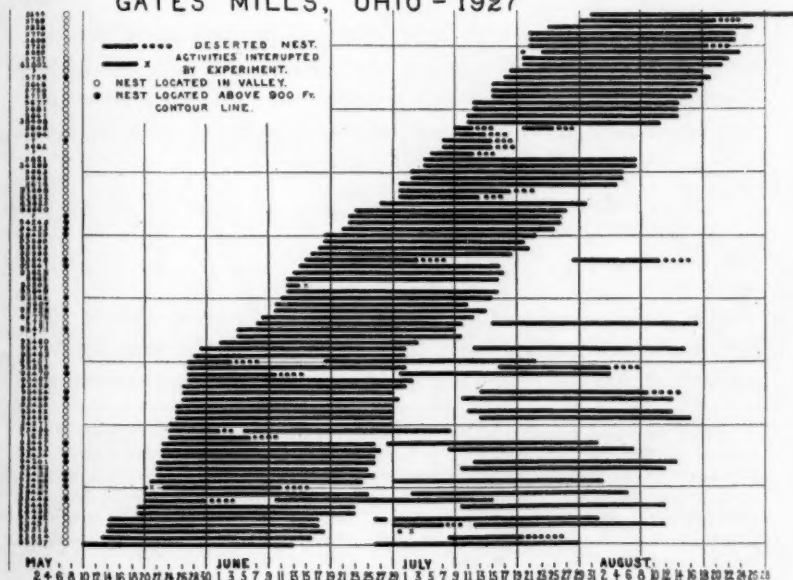


FIG. 4. LINES REPRESENT PERIOD FROM LAYING OF FIRST EGG TO DEPARTURE OF YOUNG FROM THE NEST.

Arrival and Distribution of Wrens—Wrens began to arrive during the last days of April, and by May 10, the first pair had completed nest-building and their first egg was deposited. Three days later a second nest contained its first egg, and by the following day three more had reached this stage. Nest building was actively progressing on all sides, and by May 20, ten days after the first female had laid her first egg, ten females had commenced laying.

A striking fact now came before our attention. The first seven nests to contain eggs were all located down in the valley, and the first one to reach this stage on the upper plain area was ten days behind the first in the valley. From then on, until the end of May, an average of three birds commenced laying each day, and these were in the proportion of 10 above to 13 below the 900 foot contour line. Throughout the month of June the average number of females commencing to lay dropped to about one a day, and, excepting two of the earlier ones, none of them raised a second brood. (see fig. 4.)

Not only was there a striking difference in the time of nesting between birds in the valley and those above, but also a marked discrepancy in numbers was soon apparent. The distribution of first brood nests in the three areas was as follows, (cf. map, fig. 5):

The upper, plain area	17
The intermediate, cliff area	6
The lower, valley area	25
Total	48 ¹

That this selective distribution did not merely mirror the distribution of available nest boxes is shown by the map (fig. 5), wherein it will be seen that the unoccupied boxes (represented

¹ The apparent disagreement between this figure and that given above (page 195), as well as between figs. 4 and 5, is explained by the fact that an estate to the south of the territory outlined herein was included in the survey, but owing to distance, thorough observation was not always possible. The exclusion of this estate on that account was necessary, but for the purposes of calculating percentages of successful broods the added weight of such information as this estate has yielded is taken advantage of. The diagram of "Periods of nesting activities" reproduced herein as fig. 4, was prepared early in November, 1927, for use by the junior author as a lantern slide to illustrate a paper read at the annual meeting of the A. O. U. in Washington, D. C. At the time of its preparation the limits of the territory had not definitely been fixed.

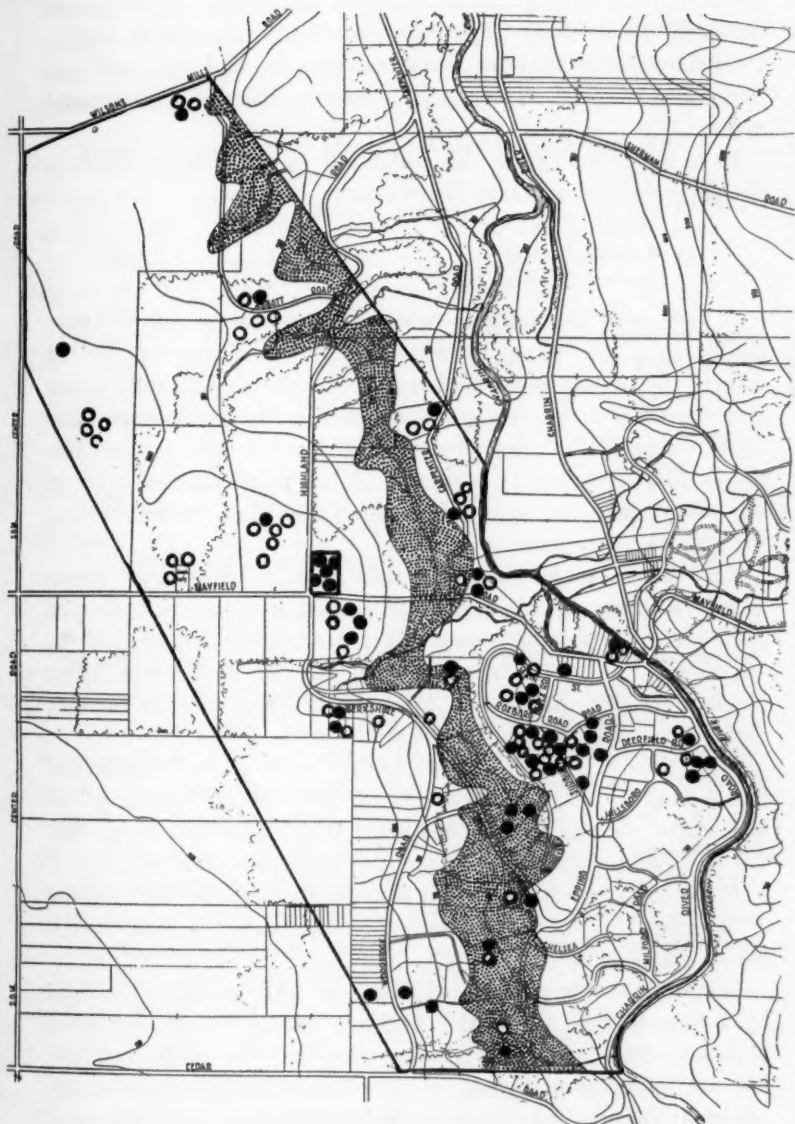


FIG. 5. DISTRIBUTION OF FIRST BROODS (SOLID DOTS) AND AVAILABLE BUT UNOCCUPIED BOXES (CIRCLES).

by circles) are throughout in excess of the occupied ones (represented by solid dots). True, there are more boxes in the valley than above but that is due to the constant demand (by the Wrens themselves) for a further supply below, and lack of such demand above.

Even more clearly was this peculiarity of distribution shown in the second brood nests, as follows:—

Upper, plain area	12
Intermediate area	4
Lower, valley area	37

A portion of the territory which for various reasons we were unable to cover during the early part of the season was, at the time of the commencement of second broods, brought fully under observation and resulted in an increase in the number of nests. As this new portion lies wholly below the 800 foot contour line the addition resulted in a raising of the percentage of nests in the valley area. At no time was the vigilance of the survey over the upper area decreased.

Speculation on the reason for such selective distribution seems hardly possible at this early date. Had a suspicion presented itself before the nesting season was under full swing, a study of the environmental conditions, particularly the flora and insect fauna, might have been attempted, but such a study with its possible correlations must remain for a future season.

Movements of Parents between broods—As a general rule it was found that the parent Wrens reared their second broods in the immediate vicinity of the nest from which the first brood had flown. There were, however, some exceptions to this rule.

A few experiments were tried in order to find whether a "sense of direction" could be attributed to the parent Wrens, and if so, to what extent.

Certain Wrens were captured at their nesting boxes and brought by automobile to the senior author's estate where they were released. Such experiments were tried only on birds that had not yet commenced laying, as it was not desired to interrupt seriously the natural course of nesting activities over the area. Fourteen such experiments were made, nine of which were with unmated males, two with mated males and three with mated

females engaged in lining their nests. The results of these experiments are hardly complete enough for analysis, but on the whole, as is seen in the following table, a tendency for the male to return from considerable distances is exhibited, while in no case was this apparent in the female.

EXPERIMENTS ON THE "HOMING" INSTINCT OF HOUSE WRENS

Band No.	Approx. dist.	Returned to Same locality	Same box	Stage of Nesting Activities
<i>Males</i>				
93415	2 miles	no	no	♂ nest
"	¼ "	yes	yes	"
93426	¼ "	"	no	"
93424	½ "	"	no	mated—no eggs
93455	1¼ "	"	"	♂ nest
"	1¼ "	"	"	"
71629	1½ "	"	"	"
93508	¾ "	"	yes	mated—no eggs
63764	1½ "	"	"	♂ nest
93691	3 "	"	"	"

Females

93425	½ miles	no	no	mated—no eggs
93413	1½ "	"	"	" " "

1 male and 1 female were not recovered.

Movements of young after leaving the nest.—Information of this sort is not easily obtained. For the first few days they may usually be seen accompanied by their parents not far from the nest, but soon the families break up and the parents return to engage in further nest building, leaving the young to take care of themselves. A single clew which throws light on this stage of a Wrens' life came to us on Sept. 27, 1927, when a banded Wren was trapped at the Laboratory. It proved to be a nestling hatched in a nest down in the valley two months before, thus indicating that the young Wrens remain scattered over the territory until instinct, or climate, drives them south.

Gates Mills, Ohio.

GENERAL NOTES.

The Western Gull (*Larus occidentalis wymani*) in the Chicago Area.—A dark-mantled Gull was observed on Lake Michigan, along the outer lagoon of Lincoln Park on October 19, 1927. As sight observations of the Great Black-backed Gull had been mentioned at a meeting of the Chicago Ornithological Club, it was presumed that the bird was of this species. It remained about this vicinity, and was usually to be found upon a certain post, during the next month. Although there were many Herring, Ring-billed, and Bonaparte's Gulls about, this individual did not associate with them, so there was no opportunity of comparing them for size. It seemed small to us, however, for the Great Black-backed Gull, so on November 17 we asked Mr. A. M. Bailey, Director of the Chicago Academy of Sciences, to examine the bird. He doubted that it was a Black-backed Gull, so the specimen was collected, and identified by Mr. Bailey as the Western Gull. It was submitted to Drs. Hellmayr and Zimmer of the Field Museum, who tentatively identified it as the Western Gull, and Dr. Jonathan Dwight finally placed it as *Larus occidentalis wymani*, the southern form of the Western Gull, a male in winter plumage, with a faint trace of immaturity.

The taking of this bird so near Lincoln Park, and so far from its true home suggested the possibility that it was an escaped bird from the Zoo. The superintendent, Mr. Parker, assured us, however, that they have not had any Western Gulls in the collection for many years, so that the bird undoubtedly was a wild one. It might be said that Lincoln Park is a natural bird haven, and that rare stragglers are likely to appear along this bit of wooded and lagoon-studded coast line at any time.

Collecting this specimen also shows plainly the dangers of sight identification of species through eliminating forms not likely to occur in a given region. It was natural to suppose our bird the Great Black-backed Gull, as it had previously been recorded from Lake Michigan. This appears to be the first record for *Larus occidentalis wymani* for Illinois and the Chicago Area.—EARL G. WRIGHT AND EDWIN KOMAREK, *Chicago Academy of Sciences*.

Forster's Tern in Ohio.—On November 2, 1927, while observing a very heavy flight of waterfowl at Buckeye Lake, Fairfield County, Ohio, I sighted a Forster's Tern (*Sterna forsteri*) which I collected. It proved to be a female in adult fall plumage. The skin is deposited in the Wheaton Club Collection at the Ohio State Museum.

So far as I can ascertain there are only two other published records for this species in Ohio, both given in Wheaton's 'Report on the Birds of Ohio' (1882) and quoted by Lynds Jones in his 'Revised Catalogue' (1903).—MILTON B. TRAUTMAN, 618 South Fifth St., Columbus, Ohio.

Cinnamon Teal (*Querquedula cyanoptera*) in Texas.—A fine specimen of the Cinnamon Teal was shot on November 30, 1927, at the "Cove" near here, by Murray H. Davis of Houston. Stragglers of this species seem to occur here every season. This specimen was given to me and is now in my collection.—ROBERT B. LAWRENCE, 411 Westmoreland Ave., Houston, Texas.

The Blue Goose in Maryland.—On December 28, 1927, while I was hunting in Dorchester County, Maryland, my cousin, Mr. Charles H. Seward, killed a strange Goose which none of us were able to identify, and realizing that it was a rare bird in that vicinity I requested him to give it to me for the Biological Survey. It has been identified as an immature female Blue Goose (*Chen caerulescens*).

I am informed there is no previous record of the taking of a Blue Goose in the State of Maryland or vicinity. This bird was killed on Meekin Creek, Dorchester County, Maryland, about twelve or fourteen miles south of Cambridge.—TALBOTT DENMEAD, *Biological Survey, Washington, D. C.*

The White-fronted Goose (*Anser albifrons gambeli*) in South Carolina.—In 'The Auk' for October, 1927, p. 559, Mr. Ludlow Griscom has recorded this Goose as new to the fauna of South Carolina citing a specimen taken near Oakley and stating that this species is not given in Wayne's 'Birds of South Carolina.' If Mr. Griscom will consult p. 205 of my book he will find that I have recorded six specimens of this Goose for South Carolina.

Dr. Coues in his 'Synopsis of the Birds of South Carolina' (Proc. Boston Soc. Nat. Hist., October, 1868, p. 124) also records this species for the state.—ARTHUR T. WAYNE, *Mount Pleasant, S. C.*

The Flamingo (*Phoenicopterus ruber*) in Northwest Florida.—Due south of Tallahassee, and projecting finger-like from the "flatwoods" of Wakulla County into Apalachee Bay, lies Shell Point, a spot favored by large numbers of Shore-birds, Herons, Brown Pelicans, and other birds of similar preferences. At low tide the shallows of the Bay, miles in extent, furnish ideal fishing grounds for wading birds, while the numerous oyster bars and the bare spots in the extensive salt marshes are much frequented by them for resting and preening. Though two or three fishermen ply their trade in the vicinity, the birds are seldom molested by human beings of this sparsely populated part of the coast.

Though rarities may be expected in such an environment, I was greatly surprised while looking over the birds on the Bay on the evening of September 24, 1927, to note a fine Flamingo feeding about, preening, and bathing in the shallows about a quarter of a mile offshore. I borrowed a skiff from a nearby fisherman and assisted by my companion, S. H. Stringer, devoted the hour before dark to a detailed study of the bird. By hiding below the gunwales and drifting with the wind we got within seventy-five

yards of it, though it proved much more wary than the numerous Ward's Herons, and the forty odd Wood Ibises that were feeding nearby. The birds finally flushed when we attempted too close an approach, and the Flamingo followed the Ibises into the gathering darkness.

I returned the following afternoon with R. W. Williams, well-known ornithologist of Washington, D. C., who fortunately happened to be visiting at his old home in Tallahassee. We were unable to locate the bird in the bay but finally found it feeding and stalking about in a small, rush-bordered salt pond just back of Shell Point, where we approached as closely as desired and studied it at our leisure. The bird was in faded pink plumage and showed no evidence of molting. A hundred feet of motion pictures, taken under some difficulties at fifty to a hundred feet, show fairly well the characteristic poses and feeding habits, so similar to those of the Wood Ibis as far as above-water appearances go. The bird was not particularly shy here, in striking contrast to its behavior in the Bay, for when I showed myself it merely arose and flew leisurely across the pond. No sound was heard from the bird during the time it was under observation.

J. B. Royall, State Game Commissioner of Florida, who has included the Flamingo among the five species the collecting of which is prohibited in the state even under scientific certificate, sent a warden down to caution fishermen of the vicinity not to molest the rare visitor, and the bird remained there at least two weeks longer.

Old records show that Flamingos formerly frequented the shallow coastal waters of the western extension of the State, which seem an ideal feeding ground for them, and this bird was probably a wanderer from the Bahamas temporarily visiting ancestral haunts. Its extreme wariness while in the open bay militates against the possibility of its having escaped from captivity, and I believe that this may be safely rejected. Judging from published records, from a region where ornithologists are apparently as scarce as Flamingos, the species has become an extremely rare visitor even in extreme southern Florida, which is scarcely to be wondered at, considering the reception usually given such bizarre creatures.—HERBERT L. STODDARD, *U. S. Biological Survey, Bechtol, Ga.*

Whooping Crane in Saskatchewan.—On October 3, 1927, when I was about ten miles north of Dundurn, Saskatchewan, southeast of Saskatoon, I saw a large white bird arise from the wheat stubble, which I am sure was a Whooping Crane (*Grus americanus*) I did not see it until it took wing but could watch it fly probably for a quarter of a mile, when I lost sight of it. It was a dark cloudy day and I was too far away to distinguish the black primaries but I am positive I was not mistaken. It had the flight of a Crane, it did not get more than ten or fifteen yards above the ground, was the size of the Whooping Crane and I could not see a dark spot on it. It, too, was in the same general territory where Mr. F. Bradshaw found a nest and eggs, some three years ago.

On November 29, 1927, Mr. Bradshaw wrote me as follows about a Whooping Crane that was shot not far from where I saw this bird: "On the evening of October 29, a farmer residing at Estevan, Sask., located a flock of Geese on his farm and under oath states that he took a pot shot at them and wounded what proved to be a Whooping Crane, but the bird being badly wounded he killed it and sent it to a taxidermist at Brandon for mounting. As soon as we heard of the matter we instructed the taxidermist to forward the bird to our Provincial Museum where it arrived in good shape and Mr. Mitchell, our taxidermist, has mounted it. There are one or two small buff colored feathers about two inches in diameter on the wings which might indicate that the bird is a two year old which had not yet reached mature plumage." This may have been the very bird I saw! I have two magnificent specimens in my collection, one from Dawson, Kidder Co., N. D., obtained in the early nineties, and the other from Buffalo Lake, eighteen or twenty miles northeast of Moose Jaw, Sask., killed about 1904 or 1905.—W. B. MERSHON, *Saginaw, Mich.*

The Marthas Vineyard Crane.—It may be of interest to know that the Crane discussed in 'The Auk' for 1926, p. 538 has been positively identified as the Sarus Crane of India. It does not seem to be generally known that this species can withstand the winters of Cape Cod without shelter, yet this specimen seems quite at home even when the ground is covered with snow. Occasionally in severe weather he will take refuge in the garage on the Whittemore estate where he lives, or in the hen house but does not remain under cover long and seems immune to cold even when the temperature falls to zero.

When his mate, a pinioned bird, died, she was mounted in a life like position and placed near a window opening on the piazza. As long as the specimen remained in sight the male bird would spend hours on the piazza looking into the window.

When excited as when feeding or in the presence of visitors, this Crane goes through the most extraordinary dance using both wings and legs and the effect of lightness and buoyancy, with excessive activity, cannot be described. He is attached to the chauffeur on the estate and will follow him about like a dog and often walks along, the chauffeur holding one of his wings.

In spite of his docility on the home grounds he must possess a rare sense of danger for he ranges far and wide and, with so many sportsmen at large, it is quite remarkable that he has not been shot.—LOMBARD CARTER JONES, M.D., *Falmouth, Mass.*

The Courtship Display of the American Bittern.—About 9:30 in the morning of June 15, 1927 I had the pleasure of witnessing a courtship scene and the display of the male American Bittern (*Botaurus lentiginosus*) at rather close range.

I was walking northward along the electric railway tracks, some seven-

teen miles north of Jackson, Michigan, and came to a brushy pond that touched the railway embankment on the west. This little pond is about 250 by 200 feet in size and there is timber on all sides except on the west. The margins of the pond are marshy but not brushy.

As I approached the pond a Bittern came over the heavy timber from the east and circled the pond on set wings, alighting about forty yards from me at the edge of the water. For a few minutes he assumed the erect stake-like pose and then began walking toward me along the margin of the pond in practically full view. The axis of his body was nearly horizontal with the neck and head raised somewhat. Before he had walked many yards the white nuptial plumes began showing at each 'shoulder.' He was moving toward me with a stately tread, the plume area gradually widening until the plumes appeared to meet across the back and to project about three inches beyond the brown feathers. The plumes were carried in a position nearly horizontal; that is they were not raised much above the contour of the back.

When the Bittern had approached within about thirty yards of me he raised his neck and head and I saw that the nearly white feathers on the throat from the base of the lower mandible downward some three inches were raised so that they projected straight out like a brush.

While the Bittern was approaching he continually uttered a throaty somewhat chirping call; *chu-peep, chu-peep*. The first syllable of the call being low and the second not loud. Mr. Verdi Burtch, of Branchport, N. Y., tells me that he has heard the Bittern utter a somewhat similar sound.

I now discovered the female Bittern at a distance of about twenty-five yards from me. Apparently she had been there all the time. As the male came up to her he raised his body to an erect position and strutted about her, all the while facing her. The female had now assumed an erect position, but not the 'frozen' attitude. However as the female knew of my presence she soon terminated the scene by rising in the air, the male following and also a third Bittern which had been near where the male had first alighted. This bird returned to the same spot in a minute or two, while the two courting Bitterns circled the pond high in the air for a minute and then flew off over the forest.

Owing to the lateness of the season I thought possible the ceremony was one of nest relief, but a search revealed no nest.

There was little to obstruct my view from the railway embankment, eight feet above the marsh, the light was over my shoulder and my 8x binocular was on the male Bittern during the whole performance.—WILLIAM G. FARGO, *Jackson, Mich.*

Cory's Least Bittern.—The A. O. U. Committee on Nomenclature has (Auk, XL, 1923, p. 524) seen fit to eliminate Cory's Least Bittern, (*Ixobrychus neoxenus*), from the 'Check-List,' basing its action on Bangs (Auk, XXXII, 1915, p. 483) and others who regard it as but a color

phase of *I. exilis*. In view of the commonness of dichromatism in the Herons and their allies, this action has, at first glance, the appearance of being justifiable. However there are factors in the case that do not seem to have been considered at their full value.

Practically every specimen of *I. neozenus* so far taken has presented more or less traces of albinism. Sometimes it is in only a stray feather or so but again it is in large, conspicuous, irregular patches. These feathers or patches are pure white and not cream or other tints and they occur irregularly over the body even where in *exilis* the plumage is strongly colored or black. They are therefore true albinisms and not mosaic retentions or reversions to *exilis* characters or indications of hybridism. If *neozenus* is a melanotic form of *exilis* it does not seem possible that it can at the same time be an albino, for melanism and albinism are mutually antagonistic tendencies and it is difficult to conceive of their occurring concurrently in the same individual,—especially in a great majority of individuals. The history of the form so far as is known is also suggestive of independence between the two. The Common Least Bittern is wide spread and occurs commonly in all suitable habitats within its range and does not seem to have shown any marked diminution of numbers in late years. If Cory's Least Bittern is but a phase of the Common Least Bittern we would expect it to occur in small but fairly constant numerical proportion wherever the latter occurred. On the contrary, except for single sporadic records rarely repeated, Cory's Bittern has occurred in only two limited localities,—certain stations in Florida and in the marshes of Toronto Bay, Ontario. Progressively and as the latter locality has been reclaimed, industrialized and destroyed as a marsh bird habitat, Cory's Bittern has practically disappeared from sight. In fact it does not seem that in occurrence, except in similarity of habitat, Cory's Bittern has any connection or correlation with the common form. Indications point to its being a distinct species, probably at the time of discovery in process of disappearance, reduced to the single breeding colony at Toronto and wintering in the marshes of Florida. The general albinism exhibited is probably the result of inbreeding or of the physical deterioration that caused the primary failure of the species. The few occurrences elsewhere than in the localities mentioned are merely the wandering stragglers that occur in any species. That they form a rather large percentage of the total number of the species may be due to the fact that they mark the original wider range of the species or the results of an imperfect migratory instinct accompanying general physical degeneracy.—P. A. TAVERNER, *National Museum of Canada, Ottawa, Canada.*

[While the status of Cory's Least Bittern will probably always remain a matter of personal opinion, Mr. Taverner's argument that its local occurrence is evidence against melanism does not seem well taken since black squirrels (melanistic gray squirrels) are well known to be local as well as the so called "*Buteo harlani*," a melanistic Red-tailed Harsh.—Ed.]

The Wintering Area of the Red and Northern Phalaropes.—Bent, in Bulletin 142, U. S. National Museum, leaves the impression that the Red Phalarope (*Phalaropus fulicarius*) and Northern Phalarope (*Lobipes lobatus*) have a virtually unknown winter home, though "they are believed to winter largely at sea." Murphy (Bird Islands of Peru, N. Y., 1925) records several valuable observations. The following is especially pertinent: "During the second day, while we steamed along the coast between Pachacamac and Cerro Azul, and not far offshore from Asia Island and other important guano deposits, we ran through many 'slicks' or glassy areas on the sea. They lay mostly between the drift-lines, and were themselves usually more or less flecked with suds and bubbles. These slicks proved to be the feeding grounds of flocks of Northern Phalaropes, aggregating tens of thousands of birds. This species of swimming Snipe, which breeds in the arctic parts of North America, had apparently never before been recorded from the southern hemisphere. Its winter home had been, in fact, unknown, although correctly assumed to lie somewhere in the oceans south of the equator. The Phalaropes that we encountered were shy and restless, usually taking wing when the 'Alcatraz' drew near. During subsequent field work I found them to be common all along the coast of Peru."—A. W. SCHORGER, 2021 Kendall Avenue, Madison, Wisconsin.

The Knot (*Calidris canutus*) on the Atlantic Coast in Winter.—On January 14, 1928, I shot three birds of this species from a flock of about forty individuals, on the beach of Big Bay Island, S. C., about thirty miles south of Charleston.

Realizing the rarity of the Knot in winter, I carefully examined the winter ranges as given in various works on ornithology, and found that the term "casual in winter on the Atlantic coast" was about all that is said. In Mr. Bent's 'Life Histories of North American Shore Birds,' which has just appeared, this winter range is more explicit. He says in part, "not well known but in the western hemisphere, seemingly most of South America, . . . , to possibly Jamaica, Barbados, rarely Louisiana (Vermillion Bay), and Florida (St. Marks).

In 'The Auk,' Vol. X, Jan. 1893, page 26, George H. Mackey states that he shot two Knots near Muskeget Island, Mass. on March 19, 1890, one of which was saved, and "is now" in the collection of William Brewster. The day on which the birds were taken was marked by a severe snow storm, and they had been seen in the vicinity since the middle of January of that year.

Mr. Mackay also states that Outram Bangs saw, and purchased, a specimen of *T. canutus*, which was hanging in the Fanuel Hall Market, Boston, in January of the same year. These, together with the writer's South Carolina specimens, appear to be the only instances of the capture of this species on the Atlantic coast during the winter months. That the two localities are so far apart, with no intermediate points represented is, indeed, a strange fact.

Being interested in ascertaining all possible in regard to the local occurrence, I made a trip on January 20, to Seabrook's Island some twenty miles south of Charleston, accompanied my wife. We saw a flock of eight Knots, but took none. However, on January 31, at the same locality, we saw twenty-nine birds, and took two. Mr. F. M. Weston, of Pensacola, Florida was present at the time. On the day the first birds were taken (January 14), I was with Mr. Herbert R. Sass of this city, who tells me that he has seen Knots frequently in winter on the beaches about Edisto Island, which is the same general locality as Big Bay Island. Another friend of the writer, Mr. Edward Manigault, a local sportsman, assures me that he has taken the Knot about Charleston in November.

On February 3, 1928, I collected one female at Edingsville Beach, S. C., and saw about two dozen. These records seem to bear out the statements of Messrs. Sass and Manigault, that the Knot occurs, more or less regularly, on the South Atlantic coast in winter.

Upon reading the last issue of 'Bird-Lore,' I found that Mr. R. J. Longstreet, of Daytona Beach, Fla., saw twenty-four Knots, while taking his Christmas census, and upon writing him, he answered that he has often seen the birds in late fall, and in December, but never after Christmas. It would doubtless clear up the matter further, if others who have winter records for this species would communicate them to 'The Auk.'—ALEXANDER SPRUNT, JR., *Charleston Museum, Charleston, S. C.*

The Western Sandpiper (*Ereunetes mauri*) in Ontario.—Mr. J. H. Fleming has called my attention to a record of the Western Sandpiper for Ontario in Eaton's 'Birds of New York' which is, so far as I am aware, the only published record for the Province. Mr. James Savage, who collected the specimen tells me that he does not know its present location.

Three other specimens taken in Ontario are here recorded.

Port Franks (Lake Huron) Ont., September 5, 1883 sex? W. E. Saunders. Specimen in Saunders' collection.

Toronto (Ashbridge's Bay, Lake Ontario), Ont., September 6, 1890 ♀. H. H. Brown. Specimen in Royal Ontario Mus. Zool. No. 24.5.7.6.

Long Point, Norfolk (Lake Erie) Ont., July 11, 1927, ♀ John Edmonds. Specimen in Royal Ontario Mus. Zool. No. 27. 9. 1. 115.

Mr. Saunders loaned me his specimen for record in this connection. The Brown specimen was in a collection presented to the Museum by Mr. Brown which was unknown to Mr. Fleming, when he published his 'Birds of Toronto' in 1906.

Mr. Savage's specimen recorded by Eaton was taken in September, 1897, at Fort Erie Beach (Opposite Buffalo, N. Y.), sex?—L. L. SNYDER, *Royal Ontario Museum of Zoology, Toronto.*

Killdeer Swimming on Green River, Utah.—While serving as a member of a biological collecting party in Southeastern Utah, during June and July of 1927, the writer had an opportunity to observe some

unusual activities of the Killdeer (*Oxyechus vociferus*) swimming on the Green River, near Green River City, Utah. At this particular point the river was from eight to twelve feet deep and about fifty yards wide. The current was rather strong. The bird was first observed out in the middle of the stream swimming toward the west bank, where the writer was hidden in a clump of dense shrubbery. When the bird came within a few feet of the shore it arose with as much skill and grace as a duck, and flew a few yards up stream and again lit. After about five minutes it once more flew to the middle of the stream, and seemed to drift with the swift current. However, it was apparently swimming, for the current took it down stream only about one-third as fast as it carried some small drift wood. The third time the bird was seen to rise and light on the muddy stream. After another ten minutes on the water it left and flew inland. While on the river it was not observed securing food. It seemed to be perfectly at ease in rising, lighting, and swimming.—CLARENCE COTTAM, Department of Zoology and Entomology, Brigham Young University.

Mountain Plover at Daytona Beach, Florida.—On December 17, 1927, I took a specimen of the Mountain Plover (*Podasocys montanus*) on the beach a few miles south of Daytona Beach. The bird was with a flock of twelve Knots (*Calidris canutus*) and was noted as I was riding down the beach in my car. I observed the Plover at close range for several minutes (it was quite unsuspicious), but was unable to determine the species. My gun was at home, about four miles away. However, I took a chance that the bird would remain, made the eight-mile round-trip, and found him waiting for me on return, with the result that the specimen was taken and is now mounted in our local Pier Museum.

According to Forbush, in his 'Birds of Massachusetts and other New England States,' the Mountain Plover is "at home on the desert lands of the West and on the shores of the Pacific," and in eastern North America is "accidental in Florida and Massachusetts." So far as I can ascertain, there is but one published record for Florida—that found on page 175 of Maynard's 'Birds of Eastern North America' (Revised Edition), where the author writes, "On the first Day of December, 1870 . . . at Key West, I observed a small flock of about half a dozen birds [Mountain Plover] . . . they were extremely wild . . . but at last I secured a specimen . . ."—R. J. LONGSTREET, Daytona Beach, Florida.

Lapwings Invade Newfoundland and Canada.—It is a matter of great rarity and interest when single birds (not wandering seafoal) of European species appear in North America as 'stragglers' travelling on their own wings; but now has occurred the astonishing fact that hundreds, perhaps thousands, of Old World Lapwings (*Vanellus vanellus*) have visited the northern shores of this western continent during the early months of the present winter.

Early in January of this year I began to receive from correspondents in Newfoundland letters addressed to my Natural History department of 'The Family Herald and Weekly Star' of Montreal, asking the name and habitat of unknown birds that had suddenly appeared in various parts of that big island. From the rough and scanty descriptions given me I judged that the strangers must be European Lapwings, and consultation with Mr. W. DeWitt Miller and other ornithologists and their collections at the American Museum of Natural History in New York, confirmed my conclusion. These Lapwings were observed first on December 1 and during that month appeared to be well scattered over Newfoundland, and further reports rapidly came to my desk, enabling me to publish a fair account of this novel invasion in my page of the 'Weekly Star', under date of January 25, 1928. While a few writers mentioned or implied that only a single-bird—quickly noticed, for nothing like this Plover exists in America—was seen by them at the time of writing, most of my correspondents spoke of 'flocks.' One letter said that 'hundreds' arrived at Harry's Harbor on December 20, 1927, and flocks are reported on the same day in the Fogo district—*islands adjacent to Cape Fogo, a forward point on the northeast coast.* Several other communications spoke of 'eight' to 'thirty or forty,' and in general it was made evident that great numbers of these birds were visible, in companies and over a large territory, from mid-December to mid-January.

All the letter-writers asserted that easterly gales had assailed the northern coasts about the time the foreign birds became noticeable, one man reporting that he had picked up a specimen on the seashore in the midst of a raging wind. "During the second week of December, 1927," to quote a letter from Mr. Theodore Bugden, of Deer Lake, Nfld., "there was a succession of strong easterly storms, with rain, followed by cold westerly winds about the third week. . . . The birds remained at Deer Lake for three days only, and disappeared during a strong westerly wind. None have been seen since." (A westerly wind there would blow toward the forested, thinly settled interior of the island.) Other correspondents note a similar sudden departure from various places—whither no one knew.

On their first coming, as all agree, the Lapwings appeared very weary, thin and tame, but began at once to search for and find food on the ground; and as they rested and gained strength they became wilder and noisier. No evidence is at hand as to whether females as well as males were present, the small differences between the sexes not being noticeable in the circumstances.

As was to be expected, I presently heard of Lapwings in various parts of the adjacent Canadian mainland. They soon crossed St. Lawrence Gulf to Cape Breton and scattered over Nova Scotia, even finding their way to the remote island of Grand Manan. In New Brunswick they were quickly reported about the city of St. John, where it is said that 'hundreds' were soon killed by a great snowfall.

Where did these birds come from?—when?—how? Mr. P. A. Taverner,

of the Canadian National Museum, tells me that the first one they heard of at Ottawa was reported from Baffin Island in October, 1927! Two cases of Lapwings, far apart in time, are on record (Macoun's Catalogue) as seen or taken in Greenland; and one instance of this bird having been taken in Newfoundland near St. John's (See 'Auk,' Vol. 23, p. 221). Such lone stragglers are familiar everywhere; but that large flocks should have come, as these Lapwings have, to our shores, is not only unprecedented, but a very remarkable fact in ornithology. Its sequel will be investigated and regarded with great interest.—ERNEST INGERSOLL, *Hotel San Remo, New York, N. Y.*

A Hybrid Scaled × Gambel's Quail from New Mexico.—Mr. R. T. Kellogg of Silver City, New Mexico, last July sent to Mrs. Bailey the skin of a Quail which is clearly a hybrid between the Arizona Scaled Quail and the Gambel's Quail of that region. The bird was killed on November 26, 1916, by W. E. Watson, on Whisky Creek near Pinos Altos, which is not far from Silver City in southwestern New Mexico. It was with a covey of Gambel's Quail when shot and seems to be an adult male in mature plumage. The parentage of the bird is evident although the general characters of the Scaled Quail predominate over most of the body. The crest and head and belly markings are a compromise between the two.

As Mr. Kellogg wished Mr. Louis Fuertes to see the specimen Mrs. Bailey sent it to him at Ithaca, N. Y. and in acknowledging its receipt he wrote on August 4, 1927 "The beautiful little "*Calliphortyx*" or "*Lophoepela*" which came yesterday afternoon is so pretty and interesting that I am going to paint it before shipping it on to Mr. Kellogg. The presence of rufous as a substitute for a half developed black is very significant. It is often, as you know, the female substitute for male black (Merganser heads etc. etc.) and the crest just half way between the parents in character and the throat show this very nicely. I once painted a very interesting wild hybrid (male) *Lophortyx californicus* and *Oreortyx* for Mr. Loomis. I have a little print of it somewhere but both the specimen and the drawing went up in smoke in the San Francisco fire. I hope to see you all at the A. O. U. in Washington where I may show this queer picture."—VERNON BAILEY, *Washington, D. C.*

Total Albinism in the Bob-white.—Through the courtesy of Mr. W. E. Nolte, of Bamberg, S. C., I have received from him, a totally albinistic specimen of the Bob-white (*Colinus virginianus*). Upon skinning the bird, I did not find a trace of color on a single feather, each one being pure white.

Occasional specimens of this species are sometimes taken locally which show a few white feathers, and I have seen one or two which were quite mottled with patches of white, but a completely unmarked specimen must be very rare. The bird was a female, and in good condition, showing no

trace of disease, or disability. It seems strange that so conspicuous a bird could have attained maturity, in view of the many enemies which it would seemingly have met with.—ALEXANDER SPRUNT, JR., *Charleston Museum, Charleston, S. C.*

Mourning Doves wintering near Scranton, Pa.—On December 27, 1927 Messrs. C. L. Camp and M. J. Kelly were out making the Christmas bird census for this region. Along the Tunkhannock creek near Nicholson, Wyoming County, they discovered a flock of thirteen Mourning Doves (*Zenaidura macroura carolinensis*). The farmer on whose land they found them allows no gunning. He did not know what kind of birds these were but said he first noticed a pair of them on his premises five years ago and they had increased from winter to winter. He sometimes provides food for them if it seems necessary but there is usually enough corn and other grain available in the fields. I think it is quite unusual for these birds to winter in our latitude.—R. N. DAVIS, *Scranton Museum, Scranton, Pa.*

Paired Ovaries in the Marsh Hawk.—On reading Mr. L. L. Snyder's remarks in the January 'Auk' (pp. 98-99) on a Marsh Hawk (*Circus hudsonius*) with double ovaries, I was reminded of two similar incidents which may be worth recording.

On September 24, 1927, Mr. J. Stevenson shot an immature female of this species at Beach, Lake Co., Illinois. Upon skinning it, I was surprised to find two ovaries, the right one being more than half as long as the left. In both ovaries the ovules were quite well developed for the season and the age of the bird.

On October 11, 1927, an adult Marsh Hawk was sent me from Williams, Hamilton Co., Iowa. Upon dissection this specimen was also found to possess a right ovary, though not so large a one as the first bird had; it was about one-fourth the length of the left one. This bird was in the streaked plumage, which Mr. Snyder seems to consider rather rare. Is not this the usual plumage of the mature female?—PIERCE BRODKORB, *Evanston, Illinois.*

The Rough-legged Hawk in Southern Georgia and the Goshawk in Florida.—Homer Williams of Thomasville, Georgia, shot a Rough-legged Hawk (*Archibuteo lagopus sancti-johannis*) on his property three miles south of that city and about ten miles north of the Florida line in February, 1925. The specimen was mounted but not sexed.

Upon my display of interest in the record, Mr. Williams very generously presented the bird to the U. S. Biological Survey collection. I have been unable to find previous records of capture of this species this far south, east of the Mississippi River.

It is of interest to note that the great Goshawk flight of 1926-27 extended to Florida, a fine adult male being shot by H. P. Whitney on his plantation in Leon County, just south of the Georgia-Florida line, on December 1,

1926. Mr. Whitney very kindly presented the specimen for the Survey collection, on being informed that it constituted the first record for the State.—HERBERT L. STODDARD, *U. S. Biological Survey, Beachton, Ga.*

Crow as Food of Goshawk.—On January 12, 1928, a friend, hearing some Crows cawing loudly over his house, observed that they repeatedly circled over an alder swamp tract, dipping and soaring, and occasionally diving frantically downward where another Crow could be heard cawing in distress. Upon closer investigation a gray blur could be discerned among the alders and, as there were poultry and pigeons about, the supposed Hawk was shot, killing the Crow too. It was a fine female specimen of Goshawk. When I prepared the skin it was evident, even though the feather tracts were well concealed by fat, that the Hawk was in a starved condition, and this seemed a good reason for the bird to attack so ill appealing a meal as a Crow would afford.

Goshawks are quite occasional in this locality this winter. In view of last year's Hawk and Owl flight it might be of interest to add that a specimen of Snowy Owl came to my notice November 13, 1927. Several of these birds, not previously recorded, were captured last year.—LEWIS O. SHELLEY, *East Westmoreland, N. H.*

The Golden Eagle (*Aquila chrysaëtos*) in Columbia Co., New York.—Through the courtesy of officials of the New York Conservation Commission, the State Museum has received, in the flesh, a fine specimen of the Golden Eagle taken December 10, 1927, near No Bottom Pond in the Austerlitz Mts., Town of Austerlitz, Columbia Co., N. Y.

The bird was taken by Mr. George Sweet in a fox trap set near the carcass of a deer. Mr. Lewis Schrader, game warden, to whom the bird was given, is authority for the statement that the young son of Mr. Sweet in attempting to release the bird was struck on the wrist and on the leg above the knee and rather painfully injured.

The bird is apparently a female not in full adult plumage and weighed exactly ten pounds. The measurements are as follows: Extent, 83.88 inches, length 35.75 inches, wing 25.50 inches, tail 15.50 inches, tarsus 4.25 inches, bill 2.62 inches.—SHERMAN C. BISHOP, *New York State Museum.*

Notes on the Food of Some Hawks and Owls.—The following notes on the stomach contents of several Hawks and Owls may prove of interest, since they refer to food that is probably seldom taken.

1. *Circus hudsonius*. MARSH HAWK.—A Marsh Hawk killed September 24, 1927, at Beach, Lake Co., Illinois, contained two Solitary Sandpipers (*Tringa s. solitaria*). I have often watched Marsh Hawks chase Shore birds, but have never seen a capture. No doubt this individual caught the birds while they were asleep.

2. *Falco c. columbarius*. PIGEON HAWK.—The stomach of a Pigeon

Hawk shot on October 12, 1920, at Beach, held, in addition to a small bird, a considerable amount of fruit.

3. *Falco s. sparverius*. SPARROW HAWK.—One secured on May 3, 1906, near Ravinia, Lake Co., Illinois, had several grubs in the stomach. Another, taken April 24, 1926, at Winnetka, Cook Co., Illinois, was found to have fed upon ants.

4. *Asio flammeus*. SHORT-EARED OWL.—A Short-eared Owl collected at Beach October 25, 1920, contained two Juncos (*J. h. hyemalis*) and two Swamp Sparrows (*Melospiza georgiana*). Another, taken on November 12, 1927, had eaten a Snow Bunting (*Plectrophenax n. nivalis*).—PIERCE BRODKORB, Evanston, Illinois.

American Hawk Owl in Wisconsin.—On November 16, 1925, an American Hawk Owl (*Surnia ulula caparoch*), was shot by Oliver LaChance in Vilas County, Wisconsin, one mile southwest of the town of Land O' Lakes. The bird was mounted and placed in his store in the above mentioned town.

This bird, which is now in my collection, is in very excellent plumage. There are about ten previous records for the state.—CHARLES D. KLOTZ, Winnetka, Illinois.

A New Race of Screech Owl from California.—As far as is shown by my manuscript synonymy of California birds, there has, up until now, been no published record of any form of Screech Owl from that portion of this state lying east of the Sierran divide and north from latitude 35° to the region of Lake Tahoe. But manuscript field notes in the Museum of Vertebrate Zoology from different points in that general territory indicate, on the basis of the characteristic voice heard of evenings, the presence of Screech Owls rather widely. And now there has accumulated the somewhat scanty but conclusive evidence which justifies the present announcement.

This eastern portion of California includes what I have termed the Inyo subfaunal district, characterized by not a few peculiar races of birds which have been described from the White, Inyo, Panamint, or others of the numerous mountain ranges of that territory, or from the adjacent or intervening valleys. Resident birds of plastic groups many of them show well-marked characters of pale coloration and large size, as compared with related forms to the west or south. It is generally consistent, then, that *Otus* should furnish a similarly distinguishable race in this potent environment.

***Otus asio inyoensis*, new subspecies. Inyo Screech Owl.**

Type.—No. 51391, Mus. Vert. Zool.; female in full, fresh annual plumage; shot in the town of Independence, Inyo County, California, October 13, 1927, by Mr. Norman Clyde, and sent to MVZ where prepared by J. Grinnell.

Diagnosis.—A subspecies of *Otus asio* characterized in comparison with other southwestern races by large size and extremely pale coloration; ground-color of dorsum near drab-gray; streaking of both upper and lower surfaces narrow, sharply outlined, and black; white about head, on lower surface of body, and on feathering of legs, clear and extensive.

Measurements.—Of type, female: Wing, 176.5 mm.; tail, 89.5; culmen from cere, 16.2; weight, 164.5 g. Of topotype, male, No. 51440, November 17, 1927: Wing, 158.3; tail, 82.6; culmen from cere, 13.6; weight, 138.2 g. (Compare these dimensions with those presented by Ridgway, Bds. N. and Mid. Amer., Pt. vi, 1914, pp. 684-703.)

Comparisons.—In size, general pallor of coloration, and extensiveness of white, the new race resembles perhaps most closely of all the Screech Owls, *Otus asio mazwelliae*, of the Rocky Mountain region to the eastward; differs from that race, however, in still paler, more ashy and less brownish tone of general coloration; dark vermiculation beneath and on legs more sootily black; the white spots on outer webs of primaries in closed wing much the smaller in *inyoensis*, and the intervening correspondingly broader dark bars decidedly grayer in color.

Inyoensis differs from its nearest relatives to the southward, *gilmani* and *cineraceus*, in decidedly larger size, in grayer less buffy general tone of coloration, and in greater extent of white about face and on lower surface and legs. In general coloration, *inyoensis* is closest to *cineraceus*.

From *quercinus* of the opposite lower westward flank of the Sierra Nevada, *inyoensis* differs in slightly greater size and in much less brownish general cast of coloration and more extensive and clearer white areas.

Range.—So far as definitely known, the Inyo region of eastern California, from the White Mountains (pinyon belt) south to the lower end of Owens Valley and southeastward to the Panamint Mountains.

Remarks.—The first specimen of what I believe to represent the present race of Screech Owl to come to the Museum was a skeleton (now No. 28868) found by Mr. Halsted G. White "lying in a small brush-heap on a rock cliff" near the Roberts Ranch, about 8250 feet altitude on Wyman Creek, White Mountains, in extreme northern Inyo County, August 15, 1917. This was probably a male. The primaries were yet attached to the manus, making possible the usual measurement of wing, which was 160.5 mm. The skull is broader and a little flatter than skulls at hand of male *bendirei*.

On September 29, 1917, when collecting in the northern section of the Panamint Mountains, in eastern Inyo County, I shot a nearly full-grown young Screech Owl from a pinyon tree. This was at about 6000 feet altitude, one mile south of Lee Pump, and in the lower edge of the pinyon belt. The bird (now No. 27878, Mus. Vert. Zool.) was a male, far along in the post-juvenile molt, and shows some of the finely barred juvenile feathers still remaining about the sides of the neck. In so far as the plumage permits of comparisons, it is in coloration quite like the type of

inyoensis, perhaps a trifle browner on the back and less white beneath. The wing measures 160 mm. The weight of the bird was 140 grams.

During the following month in the same general portion of the Panamint Mountains, around Jackass Springs, I heard Screech Owls almost daily, night or morning; so the species was probably a fairly common resident there. In cataloguing, I left the bird taken without any name, for the reason that I could find no duplicate in the Museum's collection of Screech Owls already definitely classified.

Now, in the fall of 1927, Mr. Norman Clyde, of Independence, has obtained and presented to the Museum of Vertebrate Zoology a full-plumaged pair of Screech Owls, from his neighborhood, probably mates, as they were shot from the same tree, though on different dates. These serve to clear up the situation by making possible the characterization of the new subspecies as above.—J. GRINNELL, *Museum of Vertebrate Zoology, University of California, Berkeley, November 28, 1927.*

The Snowy Owl in East-central Illinois.—The appearance of the article by Dr. Gross on the migration flight of the Snowy Owl, appearing in the October issue of 'The Auk,' recalls to mind my carelessness in failing to answer the appeal of the editor of that magazine, who, in the January, 1927, issue, asked that records be submitted of this unusual flight. With due apology I would make amends so far as possible by offering herewith the few records which came my way. As Illinois was practically the outer limit of the flight, these records are of somewhat more than casual interest, and should have been submitted in time for their inclusion in the general summary. The article by Mr. Gross includes but one record from Illinois, that from Pana, on December 16, 1926. Pana is 35 miles south of Decatur, which is 75 miles west of Urbana.

1. November 26, 1926. One adult female shot by a farmer four miles west of Champaign. Stomach empty.

2. December 3, 1926. An adult male was captured alive by two high school boys at Tolona, nine miles south of Urbana. The bird is still alive in captivity.

3. December 17, 1926. One individual seen for two days in the university forestry preserve, four blocks from the campus of the University of Illinois. Record by Cahn.

4. December 22, 1926. Two shot at Tolona, both of which passed through the writer's hands. Both birds males; one had stomach empty; the other contained the remains of a mouse (*Peromyscus* sp.), and a Junco.

5. December, 1926. Exact date not available, but it was shortly before Christmas. One bird taken on the shore of the Carbondale reservoir Carbondale, Illinois. The bird was alive, but had evidently been in a trap, as both feet were off. This is the southernmost Illinois record at hand. Record by W. M. Gersbacher.

6. January 9, 1927. One individual seen at the strip mines, 4 miles west of Danville, in the woods along the Vermillion river. Record by Cahn.

7. January 10, 1927. One bird, a female, shot by a farmer two miles west of Champaign. Stomach contained remains of two *Peromyscus* sp., and one *Blarina brevicauda*.—A. R. CAHN, *University of Illinois, Urbana, Illinois*.

The Saw-whet Owl (*Cryptoglaux acadica*) at Washington, D. C.—

On January 2, 1928, a Saw-whet Owl was discovered in Arlington Cemetery by the members of the Washington Audubon Society, on their annual New Year walk. The bird was perched in a tangled thicket of honeysuckle and grape, about eight feet above the ground, and attention was drawn to it by the scolding of Titmice and Kinglets. It was tame, and satisfactorily identified by the eighteen or twenty people in the party. The following day the Owl had disappeared.—H. G. DEIGNAN, *Princeton, N. J.*

"An Ornithological Enigma" Explained.—In 'The Auk,' January, 1925, Vol. XLII, page 132, Dr. Thomas Barbour had a little article about a Parrot taken in Florida, the capture of which needs further explanation.

The Doctor states, "I have no knowledge, whatsoever, which leads me to suppose that this bird is frequently brought into captivity, and still less reason, at present, to suppose that anyone in Florida may have had specimens which could have escaped and established themselves."

It was a strange coincident that I should have arrived at the home of the man in West Palm Beach, who skinned and sent that bird to the Doctor, the day after it was shipped, and here is the information as given to me by the skinner, as well as the man who shot it, whom I also know quite well. The bird killed was not in a flock, but was alone and was killed in the back yard of a farm house near the water works west of town. It was not "feeding on cypress cones," but on the seed of stalks of corn growing in the back yard and the woman at the house remonstrated with the gunner for killing the Parrot, which had been around for some time.

This bird was, however, one of several that had escaped from a man who had brought them up from Mexico for the Stotesbury Estate at Palm Beach, where he was a landscape gardener. He later moved out back of Boynton on the edge of a large "prairie," where he opened a nursery, and took a few birds with him. While there, he received another consignment of Parrots from Mexico, of several varieties. I saw the birds here and heard from his own lips, that some four or five had escaped from him. His nursery was about five miles south, and on the edge of the same prairie on which the Parrot was killed that the Doctor received.

Mr. Deering never maintained or liberated any Parrots from his estate at (Buena Vista) Miami. However, there are numerous species of Parrots and Paroquets flying around Miami, and it was only a few days ago, that I witnessed six large ones that I took to be large Mexican "Yellow-headed" flying over Brickell Hammock and within the city limits. Another flock of smaller ones is also seen quite often in the southeast part of Miami, but just what species they are, I do not know. No doubt, though, they are

some of a flock of fifty secured by Carl G. Fisher, and liberated at Miami Beach during my residence there, 1920-1925.—HAROLD H. BAILEY, Miami, Florida.

Plumages of the Wattled Starling.—*Creatophora carunculata* in the gymnocephalic plumage is a rara avis. I believe that in this country there are only five known specimens. Two are in the Field Museum, Chicago, taken on the Toyo Plain, Somaliland on June 14, 1896; one in the Academy of Natural Sciences, Philadelphia, taken at the Cape of Good Hope, no date; one in the American Museum, New York, secured by Dr. Chapin on June 6 in the Kidong Valley, Kenya Colony, and one specimen which I have, probably coming from Abyssinia. This Wattled Starling with the head feathered on the other hand is common in collections. A great deal of speculation as to the reason why this should be so has been indulged in, and the consensus of opinion seems to be that only the very old birds attain the rare bare-headed state.

This however, is not the case. The plumage is seasonal and not due to age. The specimen which I have was acquired, together with a female, and lived in my collection for a year and a half. I got the specimen in May, and at that time the head was completely bare, the ear holes showing plainly. The wattles on the head were well developed, those on the fore neck, not so well.

The bird remained in this plumage until the end of October when I noticed feathers appearing about the wattles of the neck. Then the lores and forehead began to produce feathers. At this point the wattles began to shrink and the feathers spread slowly backwards to the crown and occiput, and by the beginning of December the head was completely feathered.

The bird continued in this plumage until May. The feathers of the head then began to fall out and the wattles to swell and by the middle of June the head was exactly as it had been the summer before. I believe I am correct in saying that this is the first instance known of a bird which has a bare head at one season of the year, and is able to produce feathers upon it at another, and then shed them again.

Dr. van Someren states that he kept some of these birds alive for two years in an aviary but that they showed no signs of change. Dr. Chapin, with whom I have talked on the subject, suggests that this may be due to the irregularities of the molt among birds near the equator, well exemplified by the Viduinae group. Dr. van Someren's birds were I think from Tanganyka Territory.—RODOLPHE MEYER DE SCHAUENSEE, Academy of Natural Sciences, Philadelphia.

Starlings at Quincy, Illinois.—It has been about five years since Mr. Frank Smith reported the first appearance of the Starling in Illinois at Urbana. Last year, 1927, a single bird wintered about the feeding shelf of Mrs. Gustav Klarner at 30th and State Streets, Quincy. This

winter a flock of thirty spent several days about my feeding shelf. One bird flew down a chimney and was killed at Rockport, Illinois, just thirty miles south and was sent to me for identification. At the Illinois State Normal School at Macomb, about sixty miles northeast a solitary live bird was captured. Evidently the Starling is now established in western Illinois.—T. E. MUSSELMAN, *Quincy, Illinois*.

European Starling in upper Peninsula of Michigan.—On September 2, 3 and 7, 1927, a flock of 79 European Starlings was observed feeding in stubble fields with Crows near Sterlingville, which is in Chippewa County, about twenty-four miles south of Sault Ste. Marie, Michigan. When first seen on September 2 we passed within thirty feet of part of the flock as they sat on a fence, so that there was no uncertainty in identification. These Starlings were in the usual autumn plumage with dark bills, brownish backs and speckled breasts.

On the 7th the Starlings were among the hordes of migrating Savannah Sparrows. Several Sharp-shinned Hawks and one Cooper's Hawk were about, apparently preying upon the Sparrows and the bulk of the Starlings were seen to surround the Cooper's Hawk and chase it into a forest. While in the air the fifty or sixty Starlings surrounded the Hawk in a globular flock, perhaps fifteen feet in diameter, wheeling with the Hawk until the timber was reached.

A single Starling was seen by Mr. Walker at Mackinaw City, the northernmost point of the Lower Peninsula, on August 17.—WM. G. FARGO, *Jackson, Michigan* AND CHARLES F. WALKER, *Columbus, Ohio*.

Starling Notes from Lower Michigan.—It is surprising how rapidly the European Starling has increased over Lower Michigan during the past three years.

During the year 1925 we located one pair of these birds breeding in Oakland County. The following year, 1926, we located six nests of this species one in Genesee County, two in Livingston County and three in Oakland County. That same fall together with Mr. Josselyn VanTyne of Ann Arbor we observed great flocks using a wooded area near the Huron River just east and a little North of Ann Arbor for a roost, the birds were mixed with Cowbirds, Bronzed Grackles and Red-winged Blackbirds.

During the year 1927 we found many nests in a great many different counties throughout the lower half of the Lower Peninsula. One of the pairs that we had under observation, raised three broods of young. Others raised two. The birds used bird boxes, hollow trees and Woodpecker holes and similar places, many nested in the crevices of out buildings and one pair used the sky-light of an office building.

On June 3 a small flock was seen in Lake County, near Baldwin; June 10 and 11, in Charlevoix county; July 10, in Cheboygan county; July 30, in Grand Traverse county. The birds were also observed in Roscommon,

Oscoda, Kalkaska, Huron, Tuscola, Genesee, Oceana, Clare, Monroe, Livingston, Oakland, and Jackson Counties.—WALTER E. HASTINGS, *Howell, Mich.*

The European Starling in Indiana.—In addition to the records of the European Starling submitted to the Indiana Academy at its meeting in 1924 (Vol. 35, p. 325) I herewith present other records that have been reported to me since that time.

Lowell, Indiana. September 13, 1926, seven seen; September 30, five seen; October 10, two seen; April 17, 1927, one seen; April 28, two seen.—Mrs. L. G. Little.

St. Joe, Indiana. Several days ago at a "pest" hunt, over fifty strange birds were found at night roosting in the barn of Sam High, four miles west of St. Joe. From the description given I feel that these were Starlings.—Sidney R. Esten, December 31, 1926. The writer says the men promised to get some of the birds and send them to him but they have not done so.

Lafayette, Indiana. January 2, 1927, two were seen one mile south of Lafayette, near the Opp farm. January 4, 1927, that morning two Starlings were picked up dead in the barn of Mr. Scipio, about six miles south of Lafayette. Mr. Scipio said he had seen as many as twenty-four at one time. (They probably wintered.) March 9, 1927, two Starlings lit in a tree in my back yard in West Lafayette. They were found nesting six miles south of Lafayette, May 1927. At least one nest with eggs was found.—Prof. L. A. Test.

Dean M. L. Fisher reports Starlings nesting at Lafayette in 1927. Possibly the same as last noted.

Pendleton, Indiana. One seen with English Sparrows, two miles northwest of Pendleton, February 20, 1927. Three building, carrying in shreds of corn fodder, to two Flickers' holes, April 5, 1927. May 18, 1927, I went with Mr. Sidney R. Esten to the nest last mentioned, which was about twenty-five feet up in a beech snag. It contained six young ready to fly. It is about one and a half miles from Pendleton. I had been keeping watch of the parents since they began building. Mr. Esten preserved the skins of the adult male and one of the young.—Mrs. W. M. Swain. There were two more adults about the same place but it is not known that they nested. Mr. Esten kindly presented me with two of the young from that brood.

Anderson, Indiana. June 8, 1927, I went with Mr. Sidney R. Esten in response to a call from Anderson, Indiana, to see Starlings which were reported found there. Went out East Twelfth Street Road toward State Road 67. We found six nests occupied by Starlings in two hours' observation. All these nests were in holes in telephone poles along the road. The average distance from the ground was thirteen feet. We saw nine Starlings, eight adults and one immature. Parents were carrying food into three of these nests, the remaining three each had an adult head thrust from it.—Mrs. W. M. Swain.

Anderson, Indiana. June 5, 1927. Today we discovered three nests of Starlings in telephone poles between here and Chesterfield, about four miles east. Two nests were near the Poor Asylum, and one near the Tuberculosis Hospital. In two nests the young were just ready to leave. I saw six grown birds and two or three young.—Mrs. H. P. Cook.

Huntington, Indiana. In a letter dated May 31, 1927, Mrs. H. P. Cook tells of just having returned from a trip on which she saw near Huntington, a Starling.

Muncie, Indiana. February 12, 1927, saw eight Starlings near Muncie. Their peculiar whistling songs and short tails identified them. I was fortunate enough to hear at least one of their number imitate a Wood Pewee, which imitation Dr. Chapman refers to in his 'Handbook,' page 356. May 29, 1927, Mrs. W. W. Tuttle and I found Starlings in the same place, probably the same flock, apparently nesting in the top of the dead trunk of a Sycamore. The holes were seventy-five or a hundred feet above the ground, so a close inspection was impossible. I am satisfied they were nesting.—Harold A. Zimmerman.

Spiceland, Indiana. One was found near here by one of the school girls.—Mrs. Amanda C. Smith.

Fort Wayne, Indiana. February 27, 1927, a male Starling was brought to me which was taken a short distance from Fort Wayne.—C. A. Stockbridge.

One caught in a barn on a farm March 4, 1927. It was alive and in good condition and will be mounted for Concordia College Museum.—A. A. Ringwalt.

Notre Dame, Indiana. Two observed May 30, 1927. Seven other records in June as follows: one, 7; one, 11; one, 19; one, 23; one, young, 26. First nesting record June 7, 1927: one nest in a Woodpecker's hole, in a telephone pole. August records as follows: three, 10; six, 17; one, 19; one, 24; two, 27; one, 28; one, 29. September, one, 11.—Brother Alphonsus.

Maywood, Indiana. Miss Rousseau McClellan reported a Starling seen at Maywood, March 4, 1927.—S. E. Perkins III.

Fountain City, Indiana. Elmer Barnes, a former student of Earlham College, found one dead near the above town in April, 1927. The skin is preserved in Earlham College collection.—Prof. Millard S. Markle.

Brookville, Indiana. May 15, 1927, a Starling was found dead in the barn by Mrs. May Rodgers on the farm of her brother, Harry M. Stoops and herself. The only one observed there.—Dr. C. E. Case. The bird is now in my collection.

Hanover, Indiana. Mr. S. E. Perkins, III has a report from Mrs. Ida Smith, Hanover, Indiana, of one killed there, November 21, 1926. Only one seen. She sent the mounted specimen to Mr. Perkins for verification.

Through the kindness of Prof. Will Scott, I have a letter from D. O. Alter, Rushville, Indiana, saying a pair of Starlings nested in East Hill

Cemetery, that city, in 1922, 1923 and 1924, but none have been reported since. Mr. Alter says he did not verify the above reports.

The record concerning the Starling in Indiana may be briefly summarized. This is what we know:

It is rapidly increasing in numbers. It is occupying the nesting sites of other birds. It associates with English Sparrows and Grackles. It is willing to nest near habitations and along main highways.

In our state it has been found only in the northeastern half of the state. A line drawn from Lake County to Jefferson County shows that practically all the localities are northeast of that line.

It has been reported from sixteen counties; and has been found nesting in four.

Specimens are preserved for verification from seven localities.

Lack of observers in the southwestern part of the state probably accounts for our not having it reported from that territory. In fact, with more observers throughout the entire state we should probably know much more of it than we now do.

At present we do not look upon the Starling as much of a problem. Perhaps in twenty years we shall look upon it otherwise.—AMOS W. BUTLER, Indianapolis, Ind.

Yellow-headed Blackbird and Baltimore Oriole in Georgia.—

On November 26, 1927, while at Half-Moon Lake, west of Savannah, Ga., I observed a small flock of seven or eight Yellow-headed Blackbirds flying over. Half-Moon Lake is just such a place as these birds frequent where I have seen them nesting in great numbers in Wisconsin and North Dakota.

On December 9, 1927, a neighbor telephoned me that there was a strange bird in a nearby Pecan tree and upon looking it up I found a handsome male Baltimore Oriole sitting on a bare branch in the full sunlight. The night before there was a high wind from the west and he may have been blown from his course.—ANNA S. BASSETT, Savannah, Ga.

A Flight of Snow Buntings at Glencoe, Illinois.—On November 29, 1927, while out after some ducks on the Skokie Marsh one mile west of Glencoe, Ill., a very large and continuous flight of Snow Buntings (*Plectrophenax nivalis nivalis*) was observed. The flight was first observed about 8 A.M., and flocks estimated at from 200 to 1000 were passing continuously until 11 A.M. when the flight stopped. Hunters from other parts of the marsh, all reported the same experience. A very conservative estimate of the number seen by myself, would be 25,000 birds. Enough specimens were collected to be sure of the identification.

They flew south, at about 100 feet elevation, in large flocks, like Blackbirds, and the air was filled with their calls, which to me had a distinct Plover-like quality, sounding like a three note whistle, very mellow and plaintive, especially when heard from a distance.

This great flight, a large ring around the rising sun, and a large flight of Ducks from the north, consisting of Mallards, Red-legged Black Ducks, and Baldpates, all heralded a change in the prevailing Indian Summer weather, which arrived two days later in a northwest gale and temperature of 10° below zero.—FRANK GRASETT, 535 Green Bay Rd., Glencoe, Ill.

Evening Grosbeak in Wisconsin.—On July 20, 1927, I found a flock of eleven Evening Grosbeaks (*Hesperiphona vespertina vespertina*) in a pinch cherry tree on the grounds of Bent's Resort, Vilas County, Wisconsin, near the shore of Mamie Lake. There were four adults and seven young, the young apparently about a month old. I never saw these birds out of this tree where they remained until August 1.

On June 6, 1927, I observed a male and female of this species in this same tree, but I had merely recorded it in my note book as a "late date" for these birds.

Whether two of the four adults seen July 20 were the two birds I observed June 6 can only be a guess; but it seems to me that it is very probable, and would thus indicate that these birds had bred in the immediate vicinity of the resort. The young, as far as could be ascertained from their appearance, were quite unable to make a sustained flight, again indicating that their nest must have been close to this tree.—CHARLES D. KLOTZ, Winnetka, Illinois.

White-winged Crossbill in Michigan.—On June 7, 1927, I saw a White-winged Crossbill (*Loxia leucoptera*) on a small white birch about fifteen feet from the ground near the trunk of the tree. The tree was on a small island thickly grown up with birch in Gogebic county, Michigan, in the west end of Crooked Lake just west of Mamie Lake. The bird was in beautiful plumage and was exceedingly tame, allowing me to approach within ten feet of it.—CHARLES D. KLOTZ, Winnetka, Illinois.

Golden-crowned Sparrow in Massachusetts.—On January 25, 1928, Mrs. John C. P. Riese telephoned the Director of Ornithology of the Massachusetts Department of Agriculture, and told us that a Golden-crowned Sparrow, *Zonotrichia coronata*, had been at her feeding station in Bedford, Mass., on the two preceding days. She gave an excellent description of the bird, differentiating it from the White-throated and White-crowned Sparrows, and stated that she was familiar with the species in the West. On the strength of her description I visited Bedford the next day, January 26, 1928, and after visiting the stations of Mrs. Riese, where the bird was seen January 23 and 24, and of Mrs. Wallace Webber, where it spent some time January 25, the bird was finally located at the station of Mrs. C. W. Willis. It was with a flock of English Sparrows, but a number of Tree Sparrows were in the neighborhood, and it had been first seen in company with Tree Sparrows.

After watching the bird for some time, with Mrs. Willis and Mr. Maurice Broun, it was decided that the bird should be collected. Bedford has a

very active Bird Club, and birds are protected and encouraged in every way, but in this case an exception was made, in view of the very remote chance of the bird ever returning to its breeding range. Upon dissection the bird was found to have a rather severe but recent injury to its side, the skin being broken, and the flesh discolored and discharging from the wound. This was probably caused by the high wind of a few days before, the bird having been blown against some obstacle. It is therefore very doubtful whether the bird would have recovered from this wound, and the zero weather which was recorded the next week.

The bird, a male in the first winter plumage, is now in the collection of the Boston Society of Natural History. According to the A. O. U. 'Check-List' the only other records of this species east of Colorado and Nevada are from Wisconsin about seventy-five years ago.—JOHN B. MAY, M.D., Cohasset, Mass.

Cardinal at Scranton, Pa.—On January 28, 1928, while on a mid-winter bird walk near Glenburn Pond about 8 miles from Scranton, a pair of Cardinal Grosbeaks was noted and subsequently seen by our party at least three times. This, so far as we have been able to ascertain, is the first record of these birds in Lackawanna County.

Others in the party were, Geo. M. Sutton, Mrs. Edgar Sturge, Miss Helen Howarth, J. M. Cairns, and F. H. Coffin.—MRS. FRANCIS H. COFFIN, 1528 Jefferson Ave., Scranton, Pa.

A Blue Grosbeak at Newton Centre, Mass.—While combing my notes, recently, for records that might be of interest to Mr. E. H. Forbush, for his 'Birds of Massachusetts and Other New England States,' I came upon a note which should have long since been recorded in 'The Auk.'

On August 3, 1920, while sitting on my front porch, at about 7:45 in the evening, I was startled by "several loud, clear calls from somewhere close at hand, and the like of which I had never heard before." Then there were some more notes "softer and lower than I cannot begin to describe," and I discovered the bird in a tall cedar which stands close beside the house, and only about fifteen feet from where I then stood.

I had a good look at the bird, an immature male, Blue Grosbeak (*Guiraca caerulea caerulea*) before he flew off into the woods whence I, unfortunately on crutches at the time, was unable to follow. While I neither saw or heard this bird again, it must have been in the neighborhood for some time previously, for some of my sons, though they had not seen it, had heard its notes on several occasions, and had tried, unsuccessfully, to get me to identify it from their description; and several of my neighbors had both heard and seen the bird, and had supposed it to be an Indigo-bird which is not uncommon in our vicinity.—FRED H. KENNARD, Newton Centre, Mass.

The Prothonotary Warbler at Newton Centre, Mass.—Among the General Notes, in 'The Auk,' Volume 25, 1908, page 320, under the heading

"*Protonotaria citrea* at Concord, Mass." Mrs. Lidian E. Bridge noted that "this bird was identical in plumage with one shot by Mr. Kennard in Auburndale last May, which specimen is in the collection of the Boston Society of Natural History."

I had never recorded this bird, and the above note had escaped my notice for all these twenty years until recently called to my attention by Mr. Forbush's office, which seems to check up on everything.

For the sake of accuracy, perhaps, I ought to record this Prothonotary Warbler—a fine singing male—as collected on June 20, 1890, or 17 years before Mrs. Bridge says it was! I had first seen the bird on June 16 when I watched it for some time on the banks of the Charles River at Auburndale, Mass., and again in the same locality on June 19 and 20, and only collected it after I had made sure that it was a lone bachelor, and had no mate.—FRED H. KENNARD, *Newton Centre, Mass.*

Nesting of the Sycamore Warbler.—While the Sycamore Warbler (*Dendroica dominica albilora*) is a common summer resident, few there are who know it and fewer still who have found and recognized its nest. Mrs. Harry Bucklin of Brazil is indeed fortunate in her knowledge of and acquaintance with this bird. In her collection I found last summer the first Sycamore Warbler's nest I ever saw. In conversation I learned she knew the haunts of these birds and for several years past had observed their nests. After the season was over, on two occasions she was able to secure the nest. One of these (A) she has; the other (B) she kindly presented to me. Both nests were taken at Pennyroyal, Clay County, Indiana, the summer home of Mr. and Mrs. Bucklin. They were both built in the same Sycamore tree but three years apart.

Nest "A." Built about 35 or 40 feet above the ground in a flat crotch, on an approximately horizontal limb of a large sycamore tree. The birds were seen building on April 26, 1924, but they are usually seen first about the middle of April. One date is April 16. The nest measures as follows:

Outside diameter 2.50 inches; inside diameter 1.65; outside height 2 inches; inside depth 1.75 inches.

The heavier frame was composed of shreds of grapevine bark, bits of the covering and coarser fibre of weeds, mingled with which were many small pieces of cotton cord or ravelings. The nest was lined and its entire bottom was composed of the soft down obtained from dry sycamore balls. In fact the nest really had no foundation for the bottom, the lining material reaching through to the limb. It was taken after the young had left.

Nest "B." The birds were first seen April 17, 1927. The nest was built about May 14. It was about 75 feet above the ground in a crotch of small branches toward the end of a sycamore limb which was not strong enough to bear one's weight. It was so hidden by the foliage that it could not be seen until some of the leaves fell this autumn. Then it was secured but was mashed against another limb so that its measurements doubtless are only approximately correct.

The nest is composed of weed and other vegetable fibres, the shredded bark of grape-vine, a few horse hairs; lined with down from plants, including that from the ripened sycamore balls. The bottom of the nest was cushioned entirely by the latter.

Measurements (approximately): outside diameter 3 inches; inside diameter 1.50 inches; height, outside 2.75 inches; inside depth 1.45 inches.

The Sycamore Warbler is well named. It is partial to sycamore groves and frequents the sycamore trees along streams, especially their smaller tributaries. Its food is largely obtained from the sycamore. In a sycamore it builds its nest and lines it with the down from the last year's sycamore balls.—AMOS W. BUTLER, *Indianapolis, Ind.*

Water-Thrush in Pennsylvania in Winter.—About noon today (January 22, 1928) I saw a Water-Thrush (*Seiurus noveboracensis noveboracensis*) along Mill Creek near the outskirts of Doylestown, Pa. The identification was beyond question. I had the bird in view with a glass, in strong sunlight, for about fifteen minutes, and followed it, sometimes within thirty feet, for a distance of 200 yards or more as it fed greedily along the bare edge of the little stream, the banks of which were softened on this cold day by the hot rays of the January sun.

The occurrence of the Water Thrush so far north in the latter half of January is certainly most unusual and so far as I know unique.—GEORGE MACREYNOLDS, *Doylestown, Pa.*

Bicknell's Thrush in Northeastern New Jersey.—I notice in the 'Birds of the New York City Region' (Ludlow Griscom, 1923), the statement (page 373) that the author was unaware that a specimen of Bicknell's Thrush (*Hylocichla aliciae bicknelli*, now said to be more correctly called *H. minima minima*) had ever been taken in northern New Jersey. I am, therefore, calling attention to the following specimens, all males collected by W. E. D. Scott at South Orange, Essex County, N. J., in 1896, and now in the collection of the Princeton Museum of Zoölogy:

W. E. D. S. 13394 September 29; wing 91 millimeters.

"	13410	"	30;	"	95	"
"	13427	October	3;	"	92	"
"	13525	"	15;	"	93.5	"

I may say that I used color as well as measurements in identifying these skins.—CHARLES H. ROGERS, *Princeton Museum of Zoölogy, Princeton, N. J.*

Recent Records for Maryland.—During a visit to Ocean City, Maryland, on December 30 and 31, 1927, we observed a flock of five Snow Buntings (*Plectrophenax nivalis nivalis*) amid the dunes of the outer beach, feeding at times alone or again in company with Horned Larks. The birds were rather wild and flew at any alarm so that it was difficult to approach them. A specimen taken has been placed in the collection of

the U. S. National Museum. The Snow Bunting, according to Kirkwood¹ has been recorded February 6, 1892, at Calverton, Maryland, and on February 10, 1895, near Melvale, and in Druid Hill Park in Baltimore. Eifrig² records one November 16, 1901, and three February 8, 1902, at the foot of Wills Mountain near Cumberland. There is further record in the files of the Bureau of Biological Survey of a flock seen by S. E. Piper near Cabin John, west of Washington, February 22, 1905. Reported to Biological Survey by A. K. Fisher.

The species thus seems to be of unusual occurrence in Maryland though possibly continued observations on the Atlantic coast may record it there in greater abundance than supposed.

During the period of our observations, which covered the region near the outer beach from a point about five miles north of Ocean City to one three and one-half miles south, we recorded approximately thirty Ipswich Sparrows (*Passerculus princeps*), their abundance being such that on one occasion we observed ten congregated in an area not more than thirty feet square where they fed on the seeds of grass on the slopes of a dune. Their comparative abundance on this occasion suggests that the smaller number seen in this same vicinity on December 3 and 4, 1926, when the species was first definitely recorded for Maryland³ may have been due to the fact that only a part of the usual winter population had, on that earlier date, arrived from northern regions. The number found in 1927 indicates that the species is maintaining fair numbers.—ALEXANDER WETMORE AND FREDERICK C. LINCOLN, *Washington, D. C.*

Additional Notes from Wayne County, Ohio.—In 1896, Oberholser published 'The Birds of Wayne County, Ohio' and in 1912 'Some Ohio Birds' by Gossard and Harry was printed. Since that time little has been published on the avifauna of the county although several additions have been made. The following notes cover species found in the years 1925-1927. These birds are all new county records.

1. *Sterna hirundo*. COMMON TERN.—Fairly common migrant in May.
2. *Chlidonias n. surinamensis*. BLACK TERN.—Common migrant during the second week of May.
3. *Chaulelasmus streperus*. GADWALL.—Three birds seen on May 1, 1926, near Shreve, Ohio.
4. *Marila collaris*. RING-NECKED DUCK.—Fairly common throughout the spring.
5. *Chen hyperboreus* subsp. SNOW GOOSE.
6. *Chen caerulescens*. BLUE GOOSE.—On October 28, 1925, a large flock of Canada, Snow and Blue Geese flew over the town of Wooster. Snow Geese have been collected several times at the different lakes in the county but I know of no other record for Blue Geese.

¹ List Birds of Maryland, 1895, p. 329.

² Auk, 1902, 212.

³ See Wetmore, A., Auk, 1927, p. 257.

7. *Ereunetes pusillus*. SEMIPALMATED SANDPIPER.—Uncommon spring migrant.

8. *Astur a. atricapillus*. GOSHAWK.—One adult of this species was observed on January 15, 1927.

9. *Riparia riparia*. BANK SWALLOW.—Common summer resident in suitable localities.

10. *Protonotaria citrea*. PROTHONOTARY WARBLER.—Not uncommon summer resident locally. Numbers were found breeding at Myers' swamp near Shreve, Ohio, during 1926 and 1927.

11. *Mimus p. polyglottos*. MOCKINGBIRD.—One was seen on September 18, 1926.

12. *Parus c. carolinensis*. CAROLINA CHICKADEE.—A common breeder in various localities of the county. Specimens of adult birds were collected in different months of the year, the Black-capped Chickadee (*P. a. atricapillus*) however, is much more common in winter.—JAMES STEVENSON, Chicago, Illinois.

Notes on Birds of the Labrador Peninsula in 1927.—The period from May 20, 1927, to September 15 of that year I spent along the southern coast of the Labrador Peninsula, between the Bay of Seven Islands and Blanc Sablon. During most of this time I travelled back and forth along the coast in a motorboat. A few of the ornithological notes made in the period mentioned seem worth publishing and are recorded below.

1. *Rissa tridactyla tridactyla*. KITTIWAKE.—On that part of the coast situated between Cape Whittle and Harrington Harbour this species seemed much more abundant in the latter half of July than is usual there at that season. The largest number recorded in one day was 1200 on July 27, in the vicinity of the Boat Islands, but about 200 were recorded on each of several days, at various points. There is no suggestion that these birds were breeding in this region.

2. *Phalacrocorax carbo*. CORMORANT.—The colony of this species on the cliffs of Lake Island, near Cape Whittle, which is the only one known on the north shore of the Gulf of St. Lawrence, was not found to be any larger in 1927 than in 1926. There were 33 occupied nests in the colony in 1926,¹ while in 1927 only 32 such nests of this species were identified with certainty. There may, however, have been 33 occupied nests of *P. carbo* here in 1927, as there was one nest, hidden under a great bulge of rock on the cliff face, that I did not succeed in identifying, and it may have belonged to a pair of Common Cormorants or to a pair of Double-crested Cormorants.

The Common Cormorants seemed to have good success in rearing their young at this place in 1927.

3. *Histrionicus histrionicus histrionicus*. HARLEQUIN DUCK.—This species was observed about outer rocks and reefs, a flock of 32 being seen

¹ Auk, XLIV, No. 1, p. 62.

near the mouth of Kégashka River on June 10 and a flock of 7 near Wapitagan on June 17.

4. *Somateria mollissima dresseri*. AMERICAN EIDER.—American Eiders returned to this coast in the spring migration in numbers noticeably larger than those found here in recent years. By averaging my daily records of these birds for 1927 and comparing the result with figures similarly obtained in previous years, I find that an increased abundance was apparently maintained through this year's breeding season. In the Canadian Government's bird sanctuaries at Betchewun, Watshishu, Fog Island, Wolf Bay, and Cape Whittle this increase in numbers of the Eiders was especially observable.

Presumably because of a very wet summer, the reproduction of the American Eider in this region did not appear to me to be more than 75% of the normal in 1927.

While spending the night of July 16–17 on one of the Cormorant Rocks, in Cape Whittle Sanctuary, I saw with interest that between sunset and dark several Eider mothers swam with their downy young to a place where the shore of a small island was smooth and sheltered, and went ashore there for the night. The old birds carefully guided their offspring up the smooth, steep rock until they reached some small level areas, covered with grass and other low vegetation, where they settled down to pass the night in comfort. They all went back to the water and swam away the next morning between 3:00 and 4:00 o'clock.

5. *Numenius hudsonicus*. HUDSONIAN CURLEW.—In July and August this species appeared to be more numerous than in previous summers (1921–1926) that I have spent in this region. I did not, however, see very large numbers on any one day, my highest daily records for the species in 1927 being 80 at Bradore Bay, on August 26, and 60 + at Natashquan on August 10.

6. *Pluvialis dominica dominica*. GOLDEN PLOVER.—On Wapitagan Island, on September 1, Mr. Howard H. Cleaves and I saw a flock of this species containing at least 16 individuals. They were found on a small bog, some distance from the shore, and in identifying them we noted especially the lack of black axillars, and the call-notes, which were quite different from the familiar ones of the Black-bellied Plover. This is my first observation of this species in seven summers spent largely in this region, but Townsend and Allen¹ refer to it as an "uncommon autumn transient visitor" in the Labrador Peninsula.

7. *Lagopus lagopus lagopus*. WILLOW PTARMIGAN.—For the third² successive year birds of this species spent the summer on an island near the Bluff Harbour, and apparently nested there. On this island on August 1, I flushed a flock containing two adults and 10 young birds able to fly well. Local residents claimed that there were at least two such family groups of this species on the island.

¹ Birds of Labrador, Proc. Bost. Soc. Nat. Hist., XXXIII, 1907, p. 358.

² Auk, XLIV, No. 1, p. 64.

8. *Nyctea nyctea*. SNOWY OWL.—Mr. Howard H. Cleaves and I saw a Snowy Owl on Fright Island, in the Mingan Islands, near Havre St. Pierre, on June 4, 1927.

Another individual of this species spent the summer in the vicinity of Perroquet Island, in Bradore Bay, where the thousands of nesting Puffins and Razor-billed Auks offered an abundant food supply. This Owl was seen frequently by Officer Esdras Carbonneau, who was stationed at this point to protect the seabird colonies, and it was also seen, on June 28 and August 26, by Mr. Howard H. Cleaves.

9. *Nuttallornis borealis*. OLIVE-SIDED FLYCATCHER.—Two individuals of this species were clearly seen and identified near the mouth of Kégashka River on June 10. As they were hunting insects along the beach, they were probably still on migration. This is my easternmost record for this species on this coast.

10. *Quiscalus quiscula aeneus*. BRONZED GRACKLE.—A Bronzed Grackle was seen at Tabatière, on July 7 and 8, by both Mr. Howard H. Cleaves and me. This is the easternmost point on this coast at which this species has so far been recorded.

11. *Certhia familiaris americana*. BROWN CREEPER.—An individual of this species was clearly observed and identified as it was creeping up the trunks of fir trees in a small grove in Natashquan village on September 13. This is the third record of this species in the Labrador Peninsula, and extends the known range of the Creeper in that area eastward from Seven Islands to Natashquan—a distance of about two hundred miles.¹—HARRISON F. LEWIS, *Ottawa, Ontario*.

Migration Flight of Goldfinches, Kingbirds, and Nighthawks.—

At 7:40 A.M., December 22, 1927, I observed a large flock of Goldfinches (*Astragalinus tristis tristis*) flying northward back of the sand dunes which line the ocean beach. Goldfinches are usually uncommon in this part of Florida (Daytona Beach). Accordingly, I was much surprised when several more large flocks passed in the course of the next ten minutes, totalling an estimate of about 1000 birds.

At 8:30 A.M., observing that still other flocks were passing, I began to count the birds, by estimating the approximate number in each flock. Some flocks certainly contained more than 200. Small bands of 10 to 20 were not counted. 60 flocks were counted in the next 40 minutes. In the next 20 minutes, 28 flocks were counted. On a basis of 50 birds per flock (a conservative estimate), at least 4400 Goldfinches were seen to pass in this hour.

The rate of passing, which was about 100 birds per minute at 7:40 A.M. declined to about 50 per minute by 9:30 A. M. A count from 9:55 A.M. to 10:20 A.M. gave 20 flocks, or at least 1000 birds—a rate of 40 per minute. Occasional observation, as business permitted, until 12:05,

¹ Auk, XLIV, No. 1, p. 66.

showed that the flight continued regularly, but in somewhat diminishing numbers. A count from 12:05 P.M. to 12:20 P.M. gave five flocks, or a rate of about 16 birds per minute.

In the 100 minutes of actual counting at a given station, it is estimated that at least 6400 Goldfinches were seen. Inasmuch as the flight extended from at least 7:40 A.M. to 12:20 P.M., or 280 minutes, an average of 50 birds per minute (which seems conservative), gives a total of not less than 14,000 Goldfinches in the movement. How many passed before 7:40 A.M. and after 12:20 P.M., and how many passed too far to the west to be seen, can only be conjectured. It is further worthy of note that on the next two days, flocks of Goldfinches were noted flying northward.

This unprecedented concentration recalls two others of somewhat similar but less gigantic proportions that have been observed in the Daytona Beach region.

On August 26, 1923, after a heavy rain and windstorm at noon, and with a light rain still falling, I saw loose flocks of Passerine birds flying southward in large numbers, but at such an altitude that I could not determine the species. However, I found a place where some individuals from the flocks were descending to alight on or to hover over a clump of "poke-berry" bushes, and thus learned that the passing birds were Kingbirds (*Tyrannus tyrannus*). I discovered the flight some ten minutes before its end, but in that short space of time I estimated that at least 2000 Kingbirds were seen.

On May 11, 1926, at 6:10 P. M., I noticed several Nighthawks (*Chordeiles v. virginianus*) beating to the north along the coast, against a strong northwest wind. Further observation showed still other Nighthawks following in the distance. For a period of forty minutes I watched the procession. At times the birds passed in such numbers that I was unable to count them with accuracy. In the space of a six-minute period, I counted 400 Nighthawks. There were still some passing after sunset (7:00 P.M.). I estimated that upwards of 3000 Nighthawks passed my station as I watched. How many went northward before I discovered the flight is of course unknown.—R. J. LONGSTREET, *Daytona Beach, Florida*.

Nocturnal Song of Migrants.—About the middle of October, 1927, from my sixth story apartment in the residential section of Washington, at two o'clock on a moonlight night, I heard a large flock of birds suddenly alight in the tops of the street basswoods outside my window. Immediately at least ten Wood Thrushes burst into full song. They sang continuously for twenty minutes. At the end of that time one lone bird sang until the disappearance of the flock at two forty-five. The Thrushes were accompanied by small tree-top birds either Vireos or Kinglets.—H. H. HAZEN, M.D., 1911 R Street, N. W., Washington, D. C.

An Early Banding Record.—An interesting early banding record is given in the account of the Mahdist uprising in the Egyptian Sudan, 'Fire and Sword in the Sudan,' by the author, Colonel Sir R. Slaten Pasha. This officer was a captive among the Mahdists for twelve years, and was frequently called upon to translate various papers. On one occasion, in 1893, he was handed a small metal cartridge case in which was the following message written in French, German, English, and Russian:

"This Crane has been bred and brought up on my estate in Ascania Nova in the province of Tauride in South Russia. Whoever catches or kills the bird is requested to communicate with me, and inform me where it occurred."

September, 1892.

(Signed) F. R. Falz-Fein.

The Crane had been killed near Dongolla by a native, and the metal case was found about its neck.—ALFRED M. BAILEY, *Chicago Academy of Sciences*.

Wintering Mniotiltidae in Central Ohio.—Four species of Mniotiltidae have been recorded in winter from central Ohio since 1922 according to records of the Wheaton Club of Columbus, the Orange-crowned Warbler (*Vermivora celata*), Myrtle Warbler (*Dendroica coronata*), Palm Warbler (*Dendroica palmarum palmarum*), and Northern Yellow-throat (*Geothlypis trichas brachidactyla*). The occasional presence of the Myrtle Warbler as a winter resident is not surprising since it has frequently been recorded at this season from other northern states. Apparently, however, this bird was not known as a winter resident to the earlier Ohio ornithologists.

Of the three remaining species only one, the Orange-crown, has been found in winter in the northern states often enough to be considered anything but casual at this season. Wright (Auk, 1917, p. 11) gives numerous Massachusetts records in the early part of the winter but offers little data which would suggest that the species had successfully survived the season.

On December 26, 1926, a single Orange-crowned Warbler was observed in Greenlawn Cemetery near Columbus by Edward S. Thomas, Robert M. Geist and Stanley Douglas. Later other observers noted an Orange-crown in the same locality, doubtless the same bird. It was seen on January 7, 1927, January 16, 29, 30; February 7 and 10. It was shy and restless, associating but little with other birds. Whether its disappearance after February 10 was due to an accidental death, to failure of its ability to cope with winter conditions for an extended time, or to an early migratory impulse is problematical. It is unlikely that it was present and escaped notice, since there were observers familiar with the bird and its habits in the vicinity many times during late February and March. The Orange-crowned Warbler has not before been reported in central Ohio at a season which would suggest the possibility of its wintering. Except for this instance the latest fall date is October 12, 1925 and the earliest spring record, April 25, 1926. It is rare at either season.

Another Warbler which wintered in the same locality was a Palm Warbler, first seen on December 19, 1926, by Harold S. Peters and the writer. On December 26, two individuals were reported but later records in the same locality refer to a single bird. The dates were, January 2, 7, 9, 16, 22, 29, 30; February 7, 10, 19, 23; March 5 and 13. This bird was almost invariably in the company of a small flock of Juncos and two Red-breasted Nuthatches and was therefore easily located. Much of the feeding seemed to be terrestrial, the bird taking advantage of the dense shrubs and evergreens under which the ground was bare all winter. On two occasions it was noted hovering under the eaves of a stone vault, thus securing while on the wing some small lepidopterous pupae that are commonly found in the crevices of stone buildings and monuments.

The length of the period during which the bird was seen leaves no doubt that it survived the winter, which was in temperature only slightly above the normal for this region. The lowest temperatures recorded during this time were, 12° on December 19, 2° on January 15, 4° on January 16, 6° on January 26 and 15° on February 11.

The Palm Warbler had previously been suspected of wintering in central Ohio. In 1924 one was recorded December 6 and 13 near Columbus and on February 28, 1925 a single bird was noted by the writer at Buckeye Lake (Licking County). There are several November records. Thus we have evidence that the species has wintered in two of the past three years. This is entirely at variance with statements concerning the winter range of the Palm Warbler in every authority which I have been able to examine, indeed the 1924 edition of Chapman's 'Handbook' gives southern Florida as the northern limit of its winter range. In the same text we read that the Yellow Palm Warbler (*D. p. hypochrysea*) winters "from La. and northern Fla. casually to N. C. and Pa." The specimen which wintered at Columbus was typical *palmarum*. In recent numbers of 'The Auk' I note three winter records for the Palm Warbler from the northeastern states as follows: Nov. 26, 1911 to Jan. 3, 1912—Boston, Mass. (Wright—1912, p. 247); Nov. 9 and Dec. 9, 1916—Belmont, Mass. (Faxon—1917, p. 217) and Dec. 13, 1914—Long Island, N. Y. (Murphy and Rogers—1915, p. 230). Each of these records is referred to the western race, *palmarum*. From the records given here it seems apparent that the bird should be considered of casual occurrence in winter far to the north of the range commonly ascribed to it at this season.

On January 1, 1924, Mr. Edward S. Thomas found a Northern Yellowthroat in a weedy field adjacent to the Olentangy River near Columbus. This bird was seen several times during the winter by a number of local observers. On March 28 the writer saw the bird and heard it sing. Although this locality was visited frequently after this date the Yellowthroat was not found. Migrants arrived in number on April 29. The Palm Warbler mentioned above also disappeared long before the first

migrating individuals of the species arrived and we have noted a similar hiatus between the departure of wintering Myrtle Warblers and the appearance of spring migrants.—CHARLES F. WALKER, *The Ohio State Museum, Columbus, Ohio.*

Bird Migration at Guatemala City, Guatemala.—At 7 P.M. on the evening of September 19, 1927, (Guatemala time) we had, after a calm afternoon, a typical rainy season thunder storm with exceedingly violent showers. The thunder storm abating, the sky remained very cloudy and there was a drizzling rain all through the night until about 5 o'clock the following morning, interrupted by violent showers and short stops. The night seemed calm but the drifting clouds indicated movements in the upper air.

About 8 P. M. I heard, from the dark sky, bird calls: soft whistles like *gi, gi, gi*, (as *i* in give) or *di, di, di*, or hoarse monosyllables like *ca*. I finally saw about sixty birds the size of a small Heron circling over the city. About 11 P.M. the cries increased and I realized that the city of Guatemala was witnessing the splendid phenomenon of a night migration such as I had seen at Heligoland during several residences there.

I watched the flight until 2:30 A.M. and up to that time could detect no decrease in the flight although there was a constant variation in the intensity of the calls, they being more numerous during cessations in the rainfall. I heard the following calls which I give in the order of their frequency.

1. *gi, gi, gi*, (*i*, as in give) or *dudu, dudu*. Soft whistling calls certainly made by a *Totanus* like those of *T. totanus* in Heligoland. These callers seemed to always pass in little groups of three to five individuals. The number of calls per minute ranged from 5 to 40.

2. *ka, ya, yak, kyak*, (like *a* in car). Separate, deep, loud, rattling calls sometimes exactly recalling *Corvus monedula* of Europe. The birds passed at a moderate altitude over the city in groups of 80, 60, 20, 18, 15, and 5 individuals. I calculated that at one time there were at least 500 flying over the lights of the city.

3. *tsik*, a high loud tone from a moderate altitude. About the same number of calls throughout the night.

4. *tsirr*, frequently repeated at short intervals. Resembled the call of a flying *Delichon urbica* (European Martin) the call seemed so close that I thought I would be able to see the bird but I could not.

5. *pit* exactly like the short migrating note of a European Song Thrush (*Turdus musicus*).

7. *tse, tse*, (like *e* in bed).

8. *tsee, tsee*, or *fee, fee*, (like *ee* in free). Clearly two syllables, loud and clear.

9. *hēdee, hēdee*, (like *ee* in free). Loud, high and penetrating whistles like the voice of the European Sandpiper (*Actitis hypoleucos*). The whistles were from a considerable altitude and not more than five to a minute as if single birds were passing over quickly.

10. *sisisi* (like i in give). Very high and soft like the voice of the Kinglet (*Regulus regulus*).

11. *way*. Deep and not striking.

12. *tserrrr*. Heard but rarely.

The number of species probably amounted to a dozen chiefly Shore birds and little birds. That the latter made up most of the migration was also proven by observations made the next morning when I not only saw northern little birds for the first time this year but the gardens of the city were full of little greenish and yellow breasted birds (*Mniotiltidae*) which were also slipping through the underbrush and picking little insects from the branches.

I inferred that these migrants had started at dusk from a station far to the north and flying into the thunder storm lost their way and were attracted by the lights of the city and came to rest to await the dawn. The confused flight of the Heron-like birds that I saw and the coming and going of the calls during the night also indicated great confusion among the migrants.

The night of September 20, was not rainy and only a little cloudy from time to time and I heard only a few single voices chiefly the *gi, gi, gi*. It is quite likely that on this night also there was a large migration but on account of the more favorable atmospheric conditions there was no congestion and confusion. Such is the case on starlight nights at Heligoland. On the morning of the 21st, moreover, all the northern little birds had disappeared from the gardens.—FRITZ HEILFURTH, *Colegio Aleman, Guatemala City, Guatemala*.

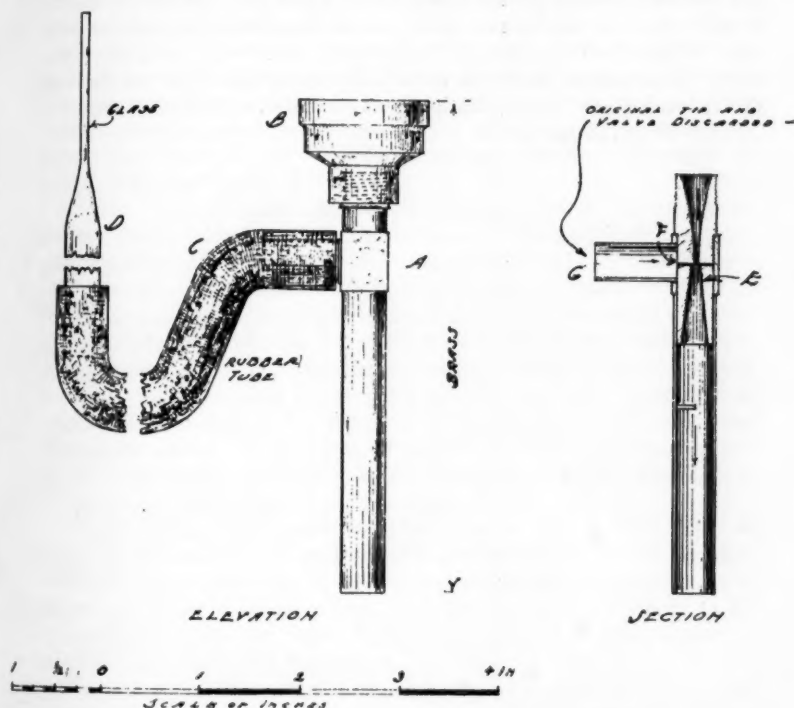
A Method of Blowing Eggs.—About twenty years or more ago, the late Fred B. McKechnie brought to my attention a simple and effective method of "blowing" eggs, which I have used very successfully ever since, when not actually in the field; and which seems never to have been adopted by egg collectors in general. This is the more remarkable because Mr. E. E. Brewster in 'The Auk' for 1895, pp. 196-198 describes almost exactly the same process. My apparatus is, however, much simpler, although Brewster's water flask has the advantage of preventing the occasional clogging of the aspirator. At the risk of some duplication it seems worth while to present an account of my apparatus.

It consists merely of the adaptation and utilization of the Aspirator or Filter Pump, (there are several makes, but I use Chapman's No. 6118), common in every chemist's laboratory, the egg being *sucked* comparatively quickly and effectively by hydraulic power, instead of blown laboriously by lung power, and often with grave danger to the shell.

The Filter Pump *A*, in the plate, and the connection *B* for attaching it to a cold water faucet, may be purchased at any chemist's supply house. These connections are made to attach either to a smooth faucet, or one with a hydrant thread; and the rubber hose *C* may be purchased there likewise. This hose, of convenient length, should be supple, but stout

enough to withstand the atmospheric pressure, with the pump in action; and should be slipped over the tube, at *G*, from which the tip and small valve within had been previously removed and discarded.

The glass tube *D* is merely ordinary glass tubing, heated and drawn out, as shown on the plate, to any required fineness, according to size of egg, and degree of incubation. The lower end, where it goes into the rubber tube, may also be drawn down a little, for greater convenience in fitting. It is well to keep a number of these tubes on hand, of assorted sizes.



After drilling the hole in the side of the egg, (care being taken to make it a trifle larger than the diameter of the tip of the glass tube to be used, so as to allow the ready access of air into the egg), turn on the water, until there is an appreciable suction at the end of the glass tube, then insert the tube in the drilled hole, and watch the contents of the egg run down the inside of the tube.

In small eggs, in an advanced state of incubation, after sucking out the more liquid contents, I have sometimes injected water, as a mild digestive, for a few days, or with slightly larger eggs, have used pepsin in solution;

while in the case of really large eggs, the embryo may be cut up with fine surgeon's scissors, and after being allowed to digest (or rot) for a few days, with frequent changes of the digestive fluid, the contents may be readily removed.

Once in a while, some of the egg contents may stick at the mouth of the glass tube, necessitating the turning off of the water, until the trouble is remedied, and quite frequently the Aspirator itself may become clogged at the point *F*, the small opening that leads into the chamber *E* where the suction is caused by the downflow of water from the faucet above; in which case the trouble may easily be remedied by pulling out the glass tube *D* from the rubber tube *C* and placing your thumb over the lower end of the Aspirator, when the water will back up and shoot out through the opening *F* and quickly flush out all obstacles.—FRED H. KENNARD, *Newton Centre, Mass.*

RECENT LITERATURE.

Forbush's 'Birds of Massachusetts.'—A little more than two years ago we had the pleasure of reviewing Volume I of the 'Birds of Massachusetts' and now Volume II¹ is before us. All that was then said in praise of both text and illustrations holds good for the present volume, as both author and artist have fully maintained the high standard that they set in the initial part of the work.

Notable among the many interesting biographies in the volume before us is the account of the Passenger Pigeon which covers the whole range of the bird as well as its occurrence in the state of Massachusetts, and which demonstrates that we have no record of the taking of a specimen for over twenty years and only one thoroughly authentic record of a specimen obtained in the past thirty.

Of the plates, of which there are twenty-eight, all by the late Louis Agassiz Fuertes, those that strike us as particularly attractive are the paintings of the Duck Hawk, the Jays, the Downy and Hairy Woodpeckers and the Owls. An excellent picture of a number of Hawks in flight by Fuertes and a sort of Hawk map by Dr. J. B. May, representing the under surface of all our Hawks (as previously done by Seton, Auk, 1897, p. 395), are a great help in the identification of these birds which are usually seen on the wing. Another useful feature is the inclusion in the text of a number of little maps of Massachusetts upon which are plotted summer, winter and nesting records of various birds by means of small dots, triangles and squares, respectively. There are also thirty-two half-tones from photographs of nests, eggs, and young of various species.

Mr. Forbush's introduction includes accounts of the topography of Massachusetts and other New England States, the climate of New England, the faunal areas, changes in bird life, changes wrought by man and natural enemies of birds. The main text following the order of the A. O. U. 'Check-List,' covers the "land birds" from the Gallinaceous species to the Icteridae among the Passeres.

The author's faunal map of New England is interesting as it shows the areas that are considered intermediate between the Canadian and Transition and between the latter and the Carolinian fauna as well as the regions where there is a tinge of Hudsonian. The true Canadian Fauna, it seems, enters Massachusetts at only two points on the northern border

¹ Massachusetts Department of Agriculture. Dr. Arthur W. Gilbert Commissioner. *Birds of Massachusetts and Other New England States* by Edward Howe Forbush, Part II. Land Birds from Bob-whites to Grackles. Illustrated with Colored Plates from Drawings by Louis Agassiz Fuertes and Figures and Cuts from Drawings and Photographs by Others. Issued by Authority of the Legislature 1927. pp. 1-1 + 1-461, pls. 34-62, figs. 36-67, 18 maps and 34 cuts in text. Price \$5.00.

and the true Carolinian not at all, being restricted to the lower Connecticut Valley and the north coast of Long Island Sound.

Mr. Forbush's comments on the natural enemies of birds deserve the careful attention of all of his readers. He says, very truly, "In a state of nature the natural enemies of any species are as essential to its welfare as are food, water, air, and sunlight. They serve to check the increase and regulate the numbers of other species which in turn, when so regulated, tend to perform a similar office for vegetation. Unthinking people are slow to realize this. . . . We destroy the Great Horned Owl, the greatest enemy of the Crow and Crows become unduly numerous and injurious. If we seriously reduce the Crows, Robins, upon which they prey, will probably become so abundant as to do great injury to small fruits. . . . The indiscriminate destruction of Herons, Hawks, Owls, Crows, skunks, weasels and other enemies of rats and mice and the larger insects, is sure to result in great periodical increases of such creatures which never can be checked by humans without great effort and expense." These are but a few of the many carefully explained instances of the danger of upsetting Nature's balance, and one should read them all and be careful to follow Mr. Forbush's advice that "the views of the well-meaning but misinformed man who advocates the extermination of lesser native natural enemies of birds should be given no serious consideration."

In the preface the author pays a tribute to the late Louis Agassiz Fuertes and as we look upon his beautiful plates—the last that he prepared for publication, we realize once more the great loss that both science and art have suffered in his passing. We understand that some of the plates for Volume III were prepared before his death but the completion of the series must be entrusted to another hand.

We trust that by this time Mr. Forbush has gotten the remainder of his text so far completed that he will soon be free from the enormous labor that its preparation has entailed, and in heartily congratulating him on the completion of Volume II, we wish him all speed with Volume III.—W. S.

Bent's 'Life Histories of North American Shore Birds.'—Mr. Arthur Cleveland Bent with tireless energy has produced another—the seventh—volume¹ of his 'Life Histories' of North American Birds. This covers about half of the Shore-birds including the Phalaropes, the Stilts and Avocets and the Snipe and Sandpipers from *Scolopax* to *Totanus* in the sequence of the A. O. U. 'Check-List.' When the other volume of the Shore-birds appears the entire series of the 'water birds' will have been completed.

¹ Life Histories of North American Shore Birds. Order Limicolae (Part I). By Arthur Cleveland Bent of Taunton, Massachusetts. Bulletin 142, U. S. Nat. Mus., United States Government Printing Office, Washington, 1927. pp. 1-ix + 1-420, pls. 1-55 (included in pagination). Price 85 cents; from Superintendent of Documents, Gov't. Printing Office, Washington, D. C.

The volume before us follows exactly the excellent plan of its predecessors, with abundant quotations from publications and original field notes of collectors and explorers, especially the many recent explorers of the arctic and subarctic regions. As most of the Shore-birds breed far to the north, but little detailed information on their nesting habits has been available until quite recently, and in Mr. Bent's work we have the life history of many of the American species adequately presented for the first time.

We all owe a debt of gratitude to Mr. Bent for his painstaking compilation and it is gratifying to note the response that his request for information has received from those best able to furnish it.

The accounts of the breeding of certain species such as the Knot and the Sanderling which we know only as transients along our sea shores are especially interesting. In the case of the former, by the way, one of the earliest records of the discovery of the downy young was, we think, the specimen secured by the late Langdon Gibson at Tucktoo Valley, Greenland, July 11, 1891 (Proc. Acad. Nat. Sci., 1895, p. 503 and 'Auk,' 1922, p. 360).

The illustrations are, as usual, excellent, consisting of photographs of nests and eggs, downy young and adults.—W. S.

Robinson's 'The Birds of the Malay Peninsula.'—This handsome volume¹ 7.5 x 10.5 inches in size is the first of a series of five and treats of the 'Commoner Birds' of the Peninsula. It is attractively printed and bound and is illustrated with twenty-five colored plates from paintings by Grönvold representing forty species many of which have not been figured before or, if so, inadequately.

By way of introduction there is an excellent map of the peninsula and a brief description of the several states and colonies, some pertinent remarks on zoogeography and nomenclature, and a bibliography.

The main text considers the birds in the order of Sharpe's 'Hand-List.' Each account is headed by the Latin name, binomial or trinomial, as the case may be, and an English name; then comes the original reference and the more important synonymy followed by the Malay name of the bird, Description, Soft Parts, Dimensions, Range in the Malay Peninsula, Extralimital Range, Nidification, and Habits. The diagnoses of the higher groups are popular in character and the keys to the genera and species simple.

The scope and method of treatment are admirable and the finely printed

¹ The Birds of the Malay Peninsula. A general account of the birds inhabiting the region from the Isthmus of Kra to Singapore with the adjacent islands. By Herbert C. Robinson C. M. Z. S., M. B. O. U., C. M. Amer. O. U., Late Director of Museums, F. M. S. Volume I: The Commoner Birds, with twenty-five full-page plates in colour. Issued by Authority of the Federated Malay States Government. H. F. & G. Witherby, 326 High Holborn, London, W. C. 1. 1927. pp. i-l, + 1-329. pl. I-XXV and Map. Price 35s.

plates most satisfactory. In all respects it is a very welcome addition to our faunal works especially as it covers a region whose avifauna has not been satisfactorily treated in this way before. Would that we might have such works on the birds of some of the South American countries!

American ornithologists will recall that this work covers Trang, the coasts of Trengganu and the Pulau Tioman Archipelago where Dr. William L. Abbott, of Philadelphia, made such extensive collections for the U. S. National Museum in 1899.

The species figured include the Malay Serpent Eagle (*Spilornis, cheela bassus*), the Great-eared Nightjar (*Lyncornis temmincki*), Swifts (*Tachornis* and *Micropus*), Barbets (*Mesobucco* and *Xantholaema*) the Pitta (*P. moluccensis*), Fantals, Bulbuls, etc.

The volumes to follow will treat of the 'Hill Birds,' 'Sporting Birds,' 'Birds of the Low Country,' and 'Other Birds.' Such an arrangement is, as the author admits, not exclusive, and one species may belong to several categories. The ornithologist doubtless would prefer a thoroughly systematic work where all species of the same genus or family would be found together, but the separate volumes, as planned, will each appeal to a somewhat different group and if they are to be sold separately this should be considered. At any rate we are informed that Mr. Robinson in conjunction with Mr. C. B. Kloss is actively engaged upon a more formal 'Fauna of the Malay Peninsula' which will doubtless fill every demand of the systematist.

Meanwhile we can commend the present volume as a credit to all concerned and not only a handy work of reference but a handsome volume for the ornithological library.—W. S.

Henry and Wait on the Birds of Ceylon.—The first part¹ of the set of colored plates of Ceylon Birds by Mr. G. M. Henry, recently announced in 'The Auk' is before us. There are sixteen quarto plates 10 x 12.5 ins. reproduced in color by Vitty and Seaborne of London and accompanying each plate is a page containing a brief account of the distribution of the species by Mr. W. E. Wait with its habits, measurements and vernacular names, together with a reference to Wait's 'Manual of the Birds of Ceylon.'

Four Babblers are figured, two Bulbuls (*Turdoides* and *Pomatorhinus*) the Spotted-wing Thrush (*Oreocincla*), two Flycatchers (*Cyornis* and *Stoparola*), a Drongo (*Dicrurus*), a Warbler (*Elaphornis*), two Barbets (*Cyanops* and *Xantholaema*), a Kingfisher, Cuckoo, and Owl.

Mr. Henry, an assistant in entomology in the Colombo Museum, is an artist of a high order and, being thoroughly familiar with the living

¹ Coloured Plates of the Birds of Ceylon. By G. M. Henry, with a short description of each bird by W. E. Wait, M. A., F. Z. S., M. B. O. U., C. F. A. O. U. Part I. with sixteen coloured plates. Published by the Ceylon Government. 1927. Title page, preface (two pages), contents (one page) and sixteen single pages of descriptions.

birds, his paintings are a great improvement on most of the available illustrations of Indian birds which have been, in almost every case, drawn from skins. The coloring is accurate and well reproduced.

American ornithologists will be interested to read the acknowledgements to that patron of ornithology, Dr. Casey A. Wood, who "not only used his good offices with the Governor and Colonial Secretary in urging the importance of publishing this work but made himself responsible for the cost of the original paintings."

The Ceylon Government is to be congratulated upon the production of such a work and those interested in fine illustrations will find in this series admirable portraits of many birds hitherto figured but poorly if at all.

As the plates are not being issued in systematic sequence, they have not been numbered nor are the pages of description numbered, the object being that they may be rebound as the owner may desire. A list of species figured accompanies each part.—W. S.

Wetmore's 'The Birds of Porto Rico and the Virgin Islands.'—

Dr. Wetmore spent nearly a year (December, 1911, to September, 1912) in Porto Rico and the off-lying islands and in 1916 published a report on the birds (Bulletin 326, U. S. Department of Agriculture). It has always been a matter of regret to ornithologists that this pamphlet was, of necessity, limited mainly to the economy of the species.

Fortunately arrangements were made later on for him to prepare the report on the birds of the island for the comprehensive scientific survey of Porto Rico and the Virgin Islands undertaken by the New York Academy of Science¹ and the two parts of Volume IX covering the birds are now before us. In them Dr. Wetmore has included not only his own field observations but extracts from all published material dealing with the birds of the island, down to the close of the year 1926, so that we have a thoroughly up to date report on the avifauna of Porto Rico, including the outlying islands eastward to Anagada as well as St. Croix, Mona and Desecheo.

There is an excellent map and an introduction covers the physiography, the author's itinerary, an historical account of ornithological research in Porto Rico and a discussion of the avifauna. From the last we learn that 188 species have been definitely found to occur on the islands while 18 others have been recorded on insufficient evidence. No less than 61 forms are migrants from North America, some being abundant in winter, others rare or casual. There are only 26 endemic species, five of which

¹Scientific Survey of Porto Rico and the Virgin Islands. Vol. IX Part 3. The Birds of Porto Rico and the Virgin Islands. Colymbiformes to Columbigiformes—Alexander Wetmore. New York Academy of Sciences. New York: Published by the Academy, 1927, pp. 243-406, pll. LV-LXI.

Part 4. Psittaciformes to Passeriformes. pp. 407-598, pll. LXII-LXV. Price \$2.00 per part.

are known only from bones in cave deposits or kitchen middens while six others are peculiar to one or more of the smaller outlying islands. Five species have been introduced—the Southern Turkey Vulture, Cuban Bob-white, Guinea Hen and two Weaver Finches.

A number of excellent half-tones show typical habitats and five others are from paintings of Porto Rico birds by the late Louis Agassiz Fuertes reproduced from the previous paper by Dr. Wetmore.

All in all this is an exceedingly well prepared and valuable report and constitutes another work of reference on the bird life of the West Indies. When one compares these modern monographs with the works of Cory he is amazed at the amount of information and the number of new forms that have been obtained in a comparatively few years.—W. S.

Taylor and Shaw on the Mammals and Birds of Mount Rainier National Park.—This excellent report¹ based mainly upon a survey made in 1919, under the auspices of the National Park Service, the U. S. Biological Survey and the State of Washington, furnishes the naturalist or the visitor to Mt. Rainier Park, with an adequate and thoroughly reliable introduction to the birds and mammals.

The physiography, life-zones and habitats are discussed in the introduction, following which is a systematic account of the various species to be found within the park limits, the information being arranged under the headings: Description, Identification, Occurrence, and Habits. There are 109 excellent half-tone illustrations from photographs by the Finleys, W. T. Shaw, J. B. Flett and others, 13 presenting characteristic views of scenery, while fifty are devoted to mammals and the rest to birds or bird habitats.

We trust that in time adequate handbooks of the natural history of all of our National Parks will be published by the Government and that, as in the present instance, the forces of the Biological Survey and other reliable authorities will be enlisted in their preparation, and that they be not entrusted to enthusiastic but unqualified persons as has sometimes been done.

There is an adequate index to the present report, and a good map, but it seems a shame that such an attractive and well printed work could not have been properly bound instead of being held together by two great metal staples driven through it from side to side so that it cannot be opened flat at any page. It is foolish to bind a book of 250 pages in such a way, a fact that the managers of the Government Printing Office must surely know.—W. S.

¹ *Mammals and Birds of Mount Rainier National Park* by Walter P. Taylor, Biologist, Bureau of Biological Survey, U. S. Department of Agriculture, and William T. Shaw, formerly Professor of Zoology, State College of Washington. With Illustrations by William L. Finley, Irene Finley, William T. Shaw, J. B. Flett and others. U. S. Department of the Interior, National Park Service. United States Government Printing Office, Washington 1927, pp. 1-249, figs. 1-109 and map. Price 85 cents (from Supt. of Documents, Government Printing Office.)

Atkinson's 'Henry Thoreau the Cosmic Yankee.'—The ever increasing numbers of readers of Thoreau will be much interested in this discussion¹ of his "thought, poetry and character." Thoreau wrote of himself "You may rely upon it that you have the best of me in my books and that I am not worth seeing personally." Mr. Atkinson emphasizing the fact of his dual personality, tells us that "with the exception of Emerson's all too brief memorial we have not a single reliable full length portrait of Thoreau from his contemporaries," and then, taking the man at his word, he proceeds to study his life and character through his writings, especially his journals.

The little book is well written and holds one's interest as the author discusses his subject's character and personality, his absorbing interests and his views upon life, touching now and again upon incidents in his life—his intense love for Concord, his life by Walden Pond, etc.

From the very nature of the case opinions of Thoreau are bound to differ but Mr. Atkinson is doubtless correct when he says: "No matter how highly we may esteem Thoreau as the herald of the millennium or how closely we may come to the radiance of his thought, I am sure most of us would have found him a refractory person."

While he was far more than a chronicler of nature, that side of his work has been so emphasized, that ornithologists are wont to regard him largely as a student of birds and nature, and most readers of 'The Auk' will want to add this volume to their Thoreau library shelf.—W. S.

Shepard's 'The Heart of Thoreau's Journals.'—The Thoreau journals comprising thirty-nine manuscript volumes and already the source of several compilations such as 'Early Spring in Massachusetts,' 'Summer,' 'Winter,' and 'Autumn' were published in their entirety, in 1906, by Houghton, Mifflin Co., under the able editorship of Bradford Torrey and Francis H. Allen.

The present volume² is an attempt to gratify the wish of many a reader of Thoreau to have the best things in the 7000 pages of the Journals more readily available, where they could be found at a moment's notice. The compiler also argues that what is now necessary in order that Thoreau may come at last into his full fame and influence, is the publication of the best of his writings in convenient compass.

The result of Mr. Shepard's efforts in this line is eminently satisfactory and here in one small volume we find the paragraphs and sentences "in which Thoreau is most fully and triumphantly himself." Furthermore an unusually good index has been prepared in which one can scarcely fail to find any desired paragraph by looking under a probable subject heading.

¹ Henry Thoreau the Cosmic Yankee. By J. Brooks Atkinson. Alfred A. Knopf. New York, 1927. pp. 1-158. Price \$2.50.

² The Heart of Thoreau's Journals. Edited by Odell Shepard. Boston and New York Houghton Mifflin Company. The Riverside Press, Cambridge. 1927. pp. i-xiii + 1-348. Price \$3.00.

Mr. Shepard has performed a service not only to the admirers of Thoreau but to Thoreau himself by thus spreading a better knowledge of the man as one of the great American authors.—W. S.

Raven's 'The Ramblings of a Bird Lover.'—The author of this readable little book¹ tells us that it: "was written for the joy of it, and with no ulterior motive except the hope that something of that joy may be passed on." He then describes his experiences in bird photography—the recreation in this case of a Canon of the Church—and all who have a similar love of nature and of bird study will follow his accounts with pleasure and profit, while the bird photographer will experience many a thrill at the success of a fellow enthusiast.

The fields of the author's activities are the coasts and uplands of England and Scotland, with a trip one summer to Holland to visit the Burdets. In the eleven chapters, sixteen land and thirty-two water-birds are discussed while the book is illustrated with thirty half-tone plates presenting sixty-seven photographs by the author.

Dr. Raven is a good observer and a scholarly writer and has made a valuable contribution to the life histories of the birds he has studied, as well as providing an entertaining book for the general reader. Bird students in any country will find his volume a welcome addition to their libraries.—W. S.

Taverner on Red-tailed Hawks.—In this paper Mr. Taverner presents the results of his studies of the Red-tailed Hawks, especially those of Canada. Unlike previous attempts to satisfactorily explain the variations in these perplexing birds, Mr. Taverner's study is based to a great extent upon breeding individuals sometimes accompanied by young, which renders his conclusions much more accurate.

He states that the Red-tail acquires a "juvenile" plumage upon leaving the nest, and retains it until the annual molt, of the next summer, approximately fifteen months. He, moreover, doubts that any individuals breed in this plumage and is of the opinion that the first nesting occurs when the birds are two years old.

The eastern and western Red-tails are distinct geographical subspecies, the former (*borealis*) having but a single phase of plumage, while the latter (*calurus*) has two—a light and a dark or melanistic phase. The dark phase, moreover, as often happens in cases of melanism, is somewhat local.

The more or less black Harlan's Hawk, *Buteo borealis harlini*, the distribution of which does not conform to any definite geographic area, Mr. Taverner regards as identical with the melanistic phase of *calurus*, and the name being the older of the two, he claims that it should prevail for the Western Red-tail. The black and white Krider's Hawk, *Buteo borealis*

¹ The Ramblings of a Bird Lover. By Charles E. Raven, D.D. Canon of Liverpool and Chaplain to the King. Illustrated with sixty-seven photographs by the author. London: Martin Hopkinson & Co. Ltd. 14 Henrietta Street, Covent Garden, W. C. 1927, pp. 1-xvi + 1-186. Price 10 shillings 6 pence net.

krideri, he considers a dimorphic color form of the eastern Red-tail, limited to the western portion of its range and apparently merging into the western Red-tail. *Buteo b. alascensis* of Alaska he dismisses as identical with the eastern race.

Three colored plates of birds and tail feathers illustrate the paper very satisfactorily and there is a full bibliography.

Mr. Taverner has certainly thrown much light upon a puzzling problem and we see no reason why his general conclusions are not sound.¹ There may, however, be some question as to the advisability of upsetting the current name of the Western Red-tail since Audubon's type specimen of *harlani* is not extant and there seems to be some doubt as to just what it was. It is not a good plan to replace a certainty with an uncertainty in nomenclature. This is purely a matter of nomenclature and in no way affects Mr. Taverner's disposition of the birds usually called *harlani*. There may also be some question as to relegating *krideri* to synonymy since it is not an albino and has a fairly definite range and consequent claims to recognition as a subspecies.—W. S.

Strecker on the Birds of McLennan Co., Texas.—Mr. Strecker presents an annotated list² of 254 species and subspecies of birds observed in McLennan Co., Texas, with especial reference to the city of Waco and its public park, Cameron Park, now maintained as a bird sanctuary. The author remembers this tract of land as it was thirty years ago, when essentially a wilderness, and his comparison of the relative abundance of birds at that time and in the present forms one of the valuable features of the list.

The paper constitutes another up-to-date county list, which will be of much assistance to local bird students, as well as a valuable work of reference.—W. S.

Strecker on Birds and Snake Skins.—Following up his publication in 'The Auk' 1926, p. 501, on the use of snake sloughs as nesting material Mr. Strecker publishes³ more details and speculations upon this problem. He finds about ten distinct species of birds which habitually use cast off snake skins in the construction of their nests and others which do so occasionally.

His conclusions are that birds do not fear snake skins nor do their enemies. In other words they do not associate the cast skin with the live

¹ A Study of *Buteo borealis*, the Red-tailed Hawk, and its Varieties in Canada. By P. A. Taverner. Museum Bulletin No. 48. Victoria Memorial Museum Biol. Series No. 13, Nov. 11, 1927. pp. 1-21. Price 25 cts.

² Notes on the Ornithology of McLennan County, Texas. By John K. Strecker, Curator, Baylor University Museum. Special Bulletin Baylor University Museum, Number One. November Nineteen Twenty-seven. (Waco, Texas.) pp. 1-65.

³ Birds and Snake-Skins. By John K. Strecker. Contributions from Baylor University Museum Number Eleven. Waco, Texas, May 15, 1927. pp. 1-12.

snake, so that its presence in the nest cannot frighten off enemies as some have assumed. He finds moreover that certain species have developed the habit of using snake skins in only a part of their range and considers that this is due to the fact that their forebears in part of the range did not, through chance gathering of nest material, select snake skins as a regular material. He argues that young birds remember the materials of which their home nests were built and "go and do likewise" when it comes their turn to build a nest of their own, and goes on to say that "Birds are taught by their parents to fly, and through a certain visual educative process, they learn to select food and nest materials." We are, however, skeptical as to birds learning from observation how to build a nest or what materials to use. If birds inherit the ability to sing a certain song, or to perform certain characteristic actions why cannot they also inherit the ability to select certain nesting materials? It is in reality no more wonderful or mysterious for a Crested Flycatcher to use snake skins for nesting material than for a Worm-eating Warbler to select the fruit stalks of *Polytrichum* moss. How such choice originated we cannot say, anymore that we can trace the origin of the migratory instinct, though when individuals are forced into a region or subjected to conditions where their favorite material is not to be had they probably take the nearest substitute which is perhaps in accord with Mr. Strecker's "chance gathering."

His advice to egg collectors to study more nests and less eggs and to collect old nests for detailed study and comparison we heartily commend; as he puts it: "If the egg collector who is never satisfied unless he has dozens of sets of eggs of the same species, in order to display every possible type of variation in shape, shade of shell coloring, and pigmented marking (these being produced through a process over which the birds have no control) could be induced to form a collection of nests from widely separated localities in order to show the differences, he would be making a much greater contribution to science."—W. S.

Kennard and Peters on Panama Birds.—The months of February and March, 1926 were spent by Mr. Kennard at Almirante Bay, Panama, making a collection of birds for the Museum of Comparative Zoology in that vicinity and in the rain forests of the higher mountains between Chiriquécito and Boquete. In this paper he gives an interesting account¹ of his itinerary while Mr. J. L. Peters presents an annotated list of the specimens collected. Two new forms were described by the authors in a preliminary paper.—W. S.

Jaeger on Nevada Birds.—Mr. Edmund C. Jaeger has published an annotated list² of the birds observed on the Charleston Mountains of

¹ A Collection of Birds from the Almirante Bay Region of Panama. By Frederic H. Kennard and James L. Peters. Proc. Boston Society of Nat. Hist., Vol. 38, No. 10, pp. 443-465. January, 1928.

² Birds of the Charleston Mountains of Nevada. By Edmund C. Jaeger. Occasional Papers of Riverside Junior College, Vol. 2, No. 1, April 1, 1927. pp. 1-8. Riverside, California.

southern Nevada, during a visit in June, 1926. Forty species were seen, some of which, from the nature of the case, are not identified subspecifically. The list is, so far as we recall, the first for this range. A previous paper¹ on the flora of the mountains, the result of previous trips to the same region, is illustrated with photographs of the mountains and contains a more detailed account of their physiography.—W. S.

Howard on *Parapavo californicus*.—This interesting fossil Gallinaeous bird was first described by Loye H. Miller from a tarso-metatarsus bone from the Pleistocene, of Rancho La Brea, California. With the subsequent investigation of this deposit no less than one thousand specimens of bones of this species have been secured, and in this paper² Miss Howard has studied in detail the various parts of the skeleton making hundreds of measurements and comparing these with measurements of allied recent forms. By a mathematical method, explained in an appendix by Frederick H. Frost, a definite ratio of resemblance of difference is obtained for each bone as compared with the corresponding bone of *Meleagris*, *Pavo* etc. Prof. Miller originally referred the species to the genus *Pavo* but later decided that it differed from the Peafowl and should stand as a distinct genus between this and the Ocellated Turkey of Yucatan, *Agriocharis*, forming as it were a connecting link between the Phasianidae and the Meleagridae.

Dr. Alexander Wetmore still later suggested that the bird was in reality a Turkey standing between *Meleagris* and *Agriocharis* and not closely related to the Peafowl. This view is fully confirmed by Miss Howard's investigation and further indicates that it is most closely related to *Agriocharis*.

There are thirteen half-tone plates illustrating the various bones of the skeleton.—W. S.

Wetmore on Migrant Shorebirds in South America.—Dr. Alexander Wetmore, when connected with the Biological Survey, spent a year, May 1920 to May 1921, in Argentina, Paraguay and Uruguay, for the purpose, primarily, of studying the winter Shorebird life. As is well known most of the waders that breed in the arctic or subarctic life zones migrate to the southern parts of South America to spend the winter and while the United States-Canadian treaty protects them while in North America there has been little or no protection accorded them in South America.

¹ A Preliminary Report on the Flora of the Charleston Mountains of Nevada. By Edmund C. Jaeger. Ibid., Vol. 1, No. 1. April 1, 1926.

² A Review of the Fossil Bird, *Parapavo californicus* (Miller) from the Pleistocene Asphalt Beds of Rancho La Brea. By Hildegard Howard. With an Appendix, Statistical Identification as Applied to *Parapavo*. By Frederick H. Frost. Univ. of Calif. Publications, Bull. Dept. Geological Sciences, Vol. 17, No. 1, pp. 1-62, plates 1-13. Berkeley, California. 1927. pp. 1-62. [Plates numbered as pages.]

Dr. Wetmore's report¹ is discouraging. He finds that in the settled regions birds of all sorts are hunted extensively during the winter and hunters in small numbers are about constantly while on holidays, they spread all over the fields and marshes. Ducks, Tinamous, Snipe, Stilts, Sandpipers, Thrushes, and apparently anything with feathers is regarded as game.

Some far-seeing men have interested themselves in having protective legislation enacted but these laws are not enforced and the public has not been educated as to the importance of birds and their protection, although efforts are now being made in this direction. In other words Argentina is about thirty years behind the United States in the matter of bird conservation. Moreover the same process of improvement of marsh land is in progress as in this country, and former feeding grounds of the waders are being converted for building or cultivation. Immigrants, too, from the south of Europe slaughter all birds as they were accustomed to do at home.

The Eskimo Curlew has been, practically, if not absolutely, exterminated and the Field Plover is rapidly following, being eagerly sought after as a table delicacy and a substitute for the Curlew. Formerly abundant it is now found only with difficulty, and is definitely rare.

The Hudsonian Godwit which occurred in the eighties in flocks of thousands has been so reduced that Dr. Wetmore saw only two flocks of four birds in three weeks time. Birds are sold regularly during the hunting season and the hotels and cafes manage to furnish game to their guests throughout the year.

While Dr. Wetmore considers that the smaller species are not in serious danger of extermination and that the wide range of the Yellow-legs will help them in maintaining their existence, the chances of the other birds mentioned above as well as larger species are very slim.

It seems deplorable that all of our efforts in behalf of the Shorebirds in the north are to be thwarted to a great extent by our neighbors in the south, but when we consider how difficult it is to educate even our educated classes in this country as to the general value of certain birds which seem to affect their personal needs—as the question of the Hawks and the sportsmen, we realize that it will be a long time before conservation education will make much headway in South America.

Dr. Wetmore has done an admirable service in gathering and placing before us this authentic information regarding a condition that we have been speculating on for many years past.—W. S.

Annual Report of the Audubon Societies.—The twenty-third annual report² of the National Association of Audubon Societies is, as always,

¹ Our Migrant Shorebirds in Southern South America. By Alexander Wetmore. Technical Bulletin, No. 26, U. S. Dept. of Agriculture, October, 1927. pp. 1-24. Price 5 cents. Sup't of Documents, U. S. Government Printing Office, Washington, D.C.

² Twenty-third Annual Report of the National Association of Audubon Societies pp. 463-532. (The report is an excerpt from 'Bird Lore' although not so indicated on the cover.)

replete with interest. The president, Dr. T. Gilbert Pearson, discusses bird sanctuaries which are steadily increasing in number from year to year, as well as his legislative work in behalf of the Brown Pelican in Florida and Texas and for the Game Refuge Bill in Congress while he has visited Alaska to secure first hand information regarding the slaughter of the Bald Eagles. See also 'Bird Lore' Jan. 1928.

The various field agents of the Association report their activities and there are reports from no less than sixty-six state and local Audubon societies and bird clubs. The Junior Audubon Clubs, the great hope of the future, now number 8,697 with a combined membership of 355,486. Then there is the treasurer's report showing nearly a million dollars of investments.

The report is most encouraging and the officers deserve great credit, and yet there are certain phases of bird protection that would seem to be almost hopeless although perhaps something could be done in this connection if all agencies realize the importance of immediate action.

Just as we begin to see a satisfactory return of breeding Sea-birds and Shore-birds along our eastern coast, where they had been all but exterminated, the craze for real estate development threatens to drain all of the marshes and ruin the beaches so that there will be no place left for the birds. Island reservations are excellent but there are but few islands available. There are still some available "points" of beach which could be made into sanctuaries but if not done at once it will be too late.

Quite as serious is the extermination of Hawks and Owls. In the effort to maintain our upland game, the breeding of game birds has been undertaken and on the game farms the ill-advised enthusiasm of the keepers and the encouragement of ammunition manufacturers everywhere is rapidly reducing our noble "birds of prey" until they are becoming rare in many sections of the country. It seems to us that a strenuous campaign of publicity in behalf of Hawks and Owls must be made at once if they are to be saved. Why too cannot the National Association and the State and local Audubon Societies voice a claim for the appointment of ornithologists on all state game commissions? The protection of all birds is delegated to the game commission in most states, and all legislation is referred to it. As there are far more citizens today interested in song birds than in game birds, and far more interested in preserving birds to watch and study than for shooting, why should they not have equal representation? We are in no way opposed to hunting but all birds should have a square deal and both classes of citizens should be represented on "game" commissions.
—W. S.

Lincoln on Returns from Banded Birds.—This paper¹ records returns obtained from banded birds by the U. S. Biological Survey, from

¹ Returns from Banded Birds 1923-1926. By Frederick C. Lincoln. Technical Bulletin No. 32, December, 1927. pp. 1-96. Price 20 cents. Sup't Documents, Gov't Printing Office, Washington, D. C.

July 1, 1923 to December 31, 1926. They number 10,338 while during the same period 234,692 birds were banded.

There is a brief introduction explaining the possibilities of the method and several illustrations of traps, etc., but most of the report consists of the tables of returns of some 180 species. Of some there is only a single return record while of others there are many—over 1000 for the Mallard. Repeats (recaptures near the place of banding within six months) are not recorded here except in special instances.

There are no comments except in the case of a few trans-Atlantic recoveries described in the preface, the idea being simply to present the facts so that they may be available for study, mapping, or any other use it may be desired to make of them.

Mr. Lincoln deserves our thanks for this painstaking compilation which will be a valuable aid to the study of migration and which puts in the hands of every bird bander the results obtained by all. A list of those coöperating with the Survey in banding work is added at the end of the report.—W. S.

Neunzig on Bird Keeping and Bird Breeding.—This exhaustive treatise¹ on "bird fancying" will be of especial interest to aviculturists. It is one of a series of works on rearing all sorts of animal forms for study, and treats the subject under various headings—bird cages, bird feeding, the care of birds, bird rearing, the care of young birds, bird trapping, etc. There are numerous illustrations of cages, feeding devices, and aviaries in the Berlin Zoological Garden, etc.—W. S.

Further papers by Collinge on the Economics of British Birds.—In "Some remarks upon the food of Flycatchers (Muscicapidae)," ² birds accused of destroying honey bees, Dr. W. E. Collinge states that none of these insects were found in contents of 60 stomachs of the Spotted and Pied Flycatchers studied. He sums up the economic tendencies of these birds as expressed through their food habits as 80 per cent beneficial, 6 per cent injurious, and 14 per cent neutral. Doctor Collinge compares the food habits of the British Muscicapidae with those of the American Tyrannidae, another group charged with excessive bee-eating, as reported upon by Professor Beal.

In another paper on "Wild Birds and Home-Grown Food," ³ Doctor Collinge notes an estimate of damage by the House-Sparrow of £8,000,000 annually, and thinks that Rooks, Starlings, Wood Pigeons, Blackbirds, and other injurious species may be charged with twice as much, making a total of £24,000,000. The paper is a plea for local control of injurious birds and strict protection of beneficial ones.—W. L. M.

¹ Vogelpflege und Vogelzucht von Rudolf Neunzig. Handbuch der biologischen Arbeitsmethoden. Lieferung 247. Abt. IX, Methoden der Erforschung der Leistungen des tierischen Organismus, Teil I, 2. Hälfte, Heft 5. pp. 703-850. Urban & Schwarzenberg. Berlin N. 24 Friedrichstrasse 105b. Price 8 Marks.

² The Ibis. Jan. 1928, pp. 131-134.

³ Journ. Land Agents' Soc. 26, No. 11, Nov. 1927, pp. 656-660.

Bailey's 'Animal Life of the Carlsbad Cavern.'—The Carlsbad Cavern, in the Pecos Valley, New Mexico, the most spectacular cavern in North America, was first made known to the general public in 1924, through an article in the 'National Geographic Magazine,' and had been set aside as a National Monument by proclamation of President Coolidge on October 25, 1923. Mr. Vernon Bailey has prepared an account¹ of the animal life of the cave and the surrounding region which has just been published as one of the monographs of the American Society of Mammalogists.

He considers the life zones, the conspicuous plant life of the region and then the mammals, birds and reptiles; the mammals taking up most of the volume. The bird chapter occupies about thirty pages and consists of a popular running account of the more notable species with no attempt at a complete list. There are many illustrations, mainly of mammals.

The volume as a whole forms a valuable and interesting contribution to the natural history of the southwest and will prove instructive and interesting reading both to residents and to travelers in this entire region as well as those making a special trip to Carlsbad. Mr. Bailey's wide experience with the mammals and birds of the west makes the work thoroughly reliable while he has put on record many original observations. He is to be congratulated upon an excellent piece of work.—W. S.

Finleys' 'Wild Animal Pets.'—William L. and Irene Finley are well-known to all lovers of wild life through their remarkable success as photographers of nature, through their writings and through Mr. Finley's lectures.

They have now issued in book form, under the title 'Wild Animal Pets,'² a number of magazine articles dealing with pet animals which they have had from time to time under their care. Most of the sketches relate to mammals but three have to do with birds—"Don Q.—A California Quail"; "General—A California Condor" and "The Gullible Gulls."

The accounts are written in popular style and while they will prove intensely interesting reading to both children and adults they contain a vast amount of original observation and thus become important contributions to mammalogy and ornithology.

There are 72 illustrations from photographs by the authors which add greatly to the attractiveness of the little volume.—W. S.

Ornithology of the Princeton University Expedition to Patagonia.—During the work of field parties sent out from Princeton from 1896 to 1899 under J. B. Hatcher to search for fossils in Patagonia, there

¹ Animal Life of the Carlsbad Cavern. By Vernon Bailey, Biologist, United States Biological Survey. Monographs of the American Society of Mammalogists. Number 3. Baltimore, The Williams and Wilkins Company. 1928. pp. i-xiii, 1-195. Price \$3.00.

² Wild Animal Pets. By William Lovell and Irene Finley. Illustrated. Charles Scribner's Sons, New York, London. 1928. pp. i-xiv, 1-311. Price \$3.00.

were made collections of birds, which were forwarded to the Princeton University Museum and form part of the collection of that institution. Study of these was undertaken by William Earle Dodge Scott with the collaboration of R. Bowdler Sharpe on an ambitious and comprehensive plan, that contemplated a complete report on the avifauna of the whole of Patagonia including both the Argentine and the Chilean sections. Final completion of this work has been delayed by a number of unavoidable circumstances. The first part (*Rheidae* to *Spheniscidae*) appeared July 26, 1904, and the second (*Procellariidae* to *Charadriidae*) March 3, 1910. As the death of Dr. Sharpe came in 1909, and that of Mr. Scott in 1910, further publication was a matter of some question as though the manuscript had been prepared for the third section and part of the fourth there still remained much to be completed.

Arrangements were made at this juncture with Dr. Witmer Stone to see the remainder of the work through the press, a labor that necessitated completion of the unfinished portion of the manuscript, as well as editorial examination of that already written. Under this agreement the third part (*Charadriidae* to *Anatidae*) came out April 1, 1912 and the fourth (*Anatidae* to *Tytonidae*) was issued July 8, 1915. In the latter we are told that the portion through the *Accipitriformes* was prepared by the original authors while the remaining sections on the *Strigidae* and *Tytonidae* were contributed by Dr. Stone. The incidence of the World War at this point caused further delay so that only on February 15, 1928 did the final section (*Psittacidae* to the end of the *Passeriformes*) appear under authorship of Stone.¹

The final portion has been written in general conformation with the plan of the earlier sections prepared by Scott and Sharpe, and includes treatment in systematic order with indications of orders, families and subfamilies, references to the first place of description of genera, species and subspecies, a detailed description of typical plumages, with measurements (in inches), a brief statement of range, and an account of habits and ecological status, which includes records made by naturalists of the Princeton parties and copious quotations from other writers from Darwin to authors of the present day. In the concluding sections Dr. Stone has wisely curtailed the citation of synonymy to the place of original description and a few pertinent synonyms, as the detailed references in the earlier parts had frequently little pertinence and were more confusing than helpful to the student of the ornithology of this region.

With regard to treatment it may be observed that the genus *Eustephanus* Reichenbach 1850 is used for the common Hummer instead of the earlier *Sephanoides* Gray 1840. The South American Flickers are listed in the

¹ Reports of the Princeton University Expeditions to Patagonia, 1896-1899, Vol. II, Ornithology, Part V, *Psittacidae-Icteridae*, cover dated 1927 but inside marked February 15, 1928, pp. 719-857, pls. II-XV, figs. 369-410, quarto, published by the University, Princeton, N. J.

genus *Colaptes* following Wetmore and Peters instead of in *Soroplex* as suggested by Ridgway, and *Henicornis wallisi* Scott is said to be the same as *Enicornis phoenicura* (Gould) as has been supposed. Apparently the present work was well along on the appearance of the last two volumes of Hellmayr's 'Birds of the Americas' as various nomenclatural changes indicated by Dr. Hellmayr are not used or considered.

As the colored plates were prepared and printed years ago there is frequent incongruity between the scientific name indicated on the plate and that accepted in the text, a matter that the author has corrected by giving the accepted name on a sheet that faces each illustration. The cuts in black and white that are scattered through the text are excellent and appeal in their sprightly attitudes to one who is familiar with many of the species in life. Structural details of certain genera will be helpful to the student.

The work will be highly useful to the student of geographic distribution in search of definite records of occurrence, while the ornithologist without extensive library facilities will find the brief descriptions and measurements taken from actual specimens a valuable assistance in the identification of specimens, for this information otherwise is difficult of access as it is found only in large and expensive catalogs or scattered widely through literature. The assembling of scattered life history material will also assist in determining information to be sought by collectors and students engaged locally in this field.

Too often when some extensive work is interrupted by the passing of those who instituted the original plan the scheme has necessarily to be abandoned through the difficulty of interesting others in its completion. Such tasks are frequently somewhat thankless and distasteful labor as the editor chosen does not have the thrill of initiation of the project and further may not wholly approve the method of treatment that has been outlined. In the present instance the author is to be congratulated upon the excellent manner in which he has fulfilled his duties and carried out the plan originated by his predecessors. The completed work will prove useful for years to come for students of the Patagonian fauna.—A. W.

The Ornithological Journals.

Bird-Lore. XXX, No. 1. January-February, 1928.

A Woodcock on its Nest. By Tappan Gregory.—Exceptionally fine photographs of the bird and nest.

Mallards on the Prairie. By H. H. Pittman.

Christmas Bird Censuses.—There are 163 reports from east of the Mississippi River of which that for the Bronx Region, N. Y., with eleven observers records 73 species while the Cape May, N. J., report with five observers is second, with 71. It is interesting to note that only 44 species are identical on these two lists giving a combined total of 100 while we note

7 additional species at intermediate stations making 107 species present on the coastal region between New York and Cape May.

The Autobiography of Jim Crow. By A. A. Allen.—An excellent life history of this much abused bird.

The Condor. XXX, No. 1. January–February, 1928.

Robert Ridgway: with a Bibliography of his published Writings and fifty illustrations. By Harry Harris.—An admirable biography containing much autobiographical material, and many letters. A list of 32 species and subspecies which were named in honor of Mr. Ridgway is appended and the bibliography originally published by Indiana University which has been carefully checked and supplemented by Dr. Charles W. Richmond.

This publication should be of great assistance in the securing of the full amount needed for the Ridgway Memorial Fund and everyone at all interested in birds should read it and learn more of the modest man whose work is to be perpetuated and name honored in the proposed memorial bird sanctuary, "Bird Haven," to the establishing and maintenance of which he has devoted so much of his resources and time.

The Antiquity of the Migratory Instinct in Birds. By Loye Miller.—Suggests that many species in Pleistocene time were just as migratory as they are today and that the origin of the instinct is much earlier than the glacial period with which it is usually associated.

Notes on Systematics of West American Birds. I. By Joseph Grinnell.—Considers that there is but one form of Fulmar in the north Pacific which should be called *Fulmarus glacialis rogersi*; that the Siskin named *Spinus pinus macropterus* is wholly Mexican, including Lower California although all Siskins are very variable; that *Progne subis hesperia* must be restricted to the Cape San Lucas district.

The Wilson Bulletin. XXXIX, No. 4. December, 1927.

Down Bird Island Way. By J. J. Carroll.—Sea-bird life off the coast of Texas.

Richardson's Grouse in the Yellowstone Park. By M. P. Skinner.—While Mr. Skinner was in a position to solve a problem that has been troubling systematists for some time he seems to have been unaware of the publications of Major Allan Brooks and others suggesting that *Denagapus obscurus* and *richardsoni* are distinct species and that the solution lies in a study of the Colorado birds. It is true that Mr. Skinner's statements so far as they go indicate intergradation but we are not clear as to whether a series of specimens has been studied or whether or not hybridism may not account for the condition that he indicates. We trust that he will consult Major Brooks' paper (Auk, 1926, p. 285) and furnish the desired data in a supplementary paper.

Where do Birds Spend the Night. By L. M. Huey.

Auxiliary Gun Barrels for Collecting Bird Specimens. By W. G. F.

Notes on Shore Birds and Water Fowl on a New Artificial Lake. By Samuel Eddy.—Lake Decatur, Decatur, Ill.

A Brief Study of Canadian Life Zone Birds in Highland Co., Virginia.
By John B. Lewis.

The Oölogist. XLIV, Nos. 11 and No. 12; XLV, No. 1. November, December, 1927, January, 1928.

Turkey Vulture Nesting in New York. By W. A. Smith.—Tonawanda swamp, Orleans Co. (Nov.).

New Tenants in Old Nests. By A. D. Henderson.—Notes on nesting birds at Belvedere, Alberta (Dec.)

The Audubon Caracara of Florida. By D. J. Nicholson (Jan.).

The Cardinal. II, No. 3. January, 1928.

An account of Cook Forest in the valley of the Clarion River, western Pennsylvania which is to be preserved as a state park. The birds, mammals, reptiles, butterflies and plants are listed, the birds by Bayard H. Christy and Geo. M. Sutton. There is also an attractive plate of the Canada Warbler and the Rhododendron a reproduction in colors of one of Mr. Sutton's paintings.

Bulletin of the Northeastern Bird-Banding Association. IV, No. 1. January, 1928.

Banding at the Sarah A. McCarthy Bird Sanctuary with especial reference to Purple Finches and Chipping Sparrows. By Daniel W. Shea.—This paper is a good example of the opportunities of bird banding and the failure of the operator to grasp the opportunity through apparent lack of knowledge of the birds which he is studying.

Mr. Shea has recorded his birds as either "immature" or "adult," which is entirely inadequate in the case of Purple Finches. During the early summer these birds wear a brown striped plumage known as the "juvenal" followed in late summer by a similar plumage called the "first winter" which is retained until after the breeding season of the following year, males and females being indistinguishable at the time of first nesting, after this the male assumes the pink plumage. Some of the "immatures" of one year are recorded as "adult males" on recovery the next year. If these were in the juvenal plumage when banded and were pink the next year then we have something unknown so far in Purple Finch history, while on the other hand if they were brown plumaged birds that had bred, our present ideas of plumage sequence would be confirmed, but the use of the indefinite term "immature" deprives the record of all of its value so far as plumage and molt are concerned.

Bird-banding has now passed the primary stage and to get full value from it all banders should be acquainted with our present knowledge of plumage sequence in all species which they handle just as the systematist must have mastered this subject before he is qualified to publish. Dr. J. Dwight's "Sequence of Plumages and Moults of the Passerine Birds of New York" is an excellent work of reference on this subject (Annals N. Y. Acad. Sci., Vol. XIII, pp. 73-360. 1900).

Birds Seen in a Transatlantic Voyage. By Charles W. Townsend.
Some Transatlantic Returns of Banded Birds. By John B. May.
Domestic Vicissitudes of Bluebirds. By Helen J. Robinson.
Xanthochrism in the Purple Finch. By C. L. Whittle.

The Ibis. (XII series) IV, No. 1. January, 1928.

Notes on Nyasaland Birds. By C. F. Belcher.—Additions and remarks on *Alethe chloensis* and *Buccanodon belcheri*.

A Diary of the Nesting of *Microlyssa exilis*, the Crested Hummingbird of Montserrat, W. I. By T. Savage English.

Further Notes on the Birds of the Balearic Islands. By P. W. Munn.

On the Birds Collected during the Third Expedition to French Indo-China. By J. Delacour and P. Jabouille.—With a colored plate of *Arborophila davidi* and *Sphenurus sieboldi muriei*.

Birds of the Gyantse Neighborhood, South Tibet. By Frank Ludlow.

A Collection of Birds from the Uluguru and the Usambara Mts., Tanganyika Territory. By Herbert Friedmann.—Collection made by Arthur Loveredge for the Museum of Comparative Zoology, Sept.-Dec., 1926.

A Description of *Atlantisia rogersi*, the Diminutive and Flightless Rail, of Inaccessible Island, with some Notes on Flightless Rails. By Percy R. Lowe.—The barbules of the wing feathers in this bird are found not to develop "along the lines of the normal volant barbule." The author regards this as very important, and argues that flightlessness in such birds is a primary condition, while in other so-called flightless Rails, with more or less normal barbules, there is merely a condition of pseudo-flightlessness. It would seem to us that the nature of the barbule cannot be a very ancient character.

Some Remarks on the Food of Flycatchers. By W. E. Collinge.

On the Affinities of *Parapavo californicus*. By Peter P. Sushkin.—In this paper Dr. Sushkin reaches exactly the same conclusions as does Miss Howard (see p. 247).

Bulletin of the British Ornithologists' Club. CCCXVIII. November 25, 1927.

This number contains the annual address of the chairman, Dr. P. R. Lowe.

A Nighthawk (*Chordeiles virginianus*) was exhibited which was shot in Scilly Isles the first record for Great Britain.

Lord Rothschild exhibited some hybrid Hummingbirds and suggested that *Oreotrochilus chimborazo* and *O. jamesoni* are dimorphic forms of the same species.

New forms of *Cyornis*, *Cyanops*, *Cyanoderma* and *Chlorocharis* are described by Messrs. Kloss, Robinson and Kinnear. While Mr. Mathews has a new genus *Rileyornis* (p. 48) for *Siphia hoevilli*.

Bulletin of the British Ornithologists' Club. CCCXIX. December 29, 1927.

W. L. Sclater describes *Francolinus coqui maharao* (p. 51) and *F. africanus archeri* (p. 51) from southern Abyssinia.

Bulletin of the British Ornithologists' Club. CCCXX. January 26, 1928.

New forms described of *Muscadivora bakeri* (p. 56) by N. B. Kinnear from New Hebrides; *Blythipicus pyrrhotis cameroni* (p. 57) by H. C. Robinson from Selangor, Malay States; *Chalcophaps indica robinsoni* (p. 58) by E. C. Stuart Baker from Ceylon, *Alauda arvensis ticehursti* (p. 65) West Galicia by H. Whistler. Messrs. Robinson and Baker review the Bustard Quails of the species *Turnix suscitator* and recognize ten races of which *T. s. interrumpens* (p. 60) Kossom, Siam; *T. s. pallescens* (p. 60) Thayetmyo, Burma; and *T. s. isabellinus* (p. 62) from Calcutta are described as new.

British Birds. XXI, No. 7. December 1, 1927.

Notes on the Nesting of the Sand Martin. By Richmond H. Hellyar. —Sand Martin is merely another name for our Bank Swallow and this paper may well be compared with those by Dr. Stoner which have appeared in 'The Auk,' with which the writer seems not to be familiar. Mr. Hellyar bands his Swallows at night bringing them to the mouth of the burrow by flashing a small lamp.

Cocks' Nests of the Whitethroat. By Stanley Lewis.—Describes a habit in this species which is well known in the case of male Wrens.

British Birds. XXI, No. 8. February, 1928.

The number is mainly devoted to the report on the 'British Birds' marking scheme for 1927. 'British Birds' is also preparing to make a count of the Heronries in Great Britain this spring.

An Early Work on Bird-Migration. By Hugh S. Gladstone.

The Avicultural Magazine. (Fourth series) V, No. 12. December, 1927.

The Yellow-breasted Cissa (*Cissa hypoleuca*). By J. Delacour.

Accounts of birds in several aviaries, color breeding of Budgerigars and Bird-catching in Senegal are other articles in this issue.

Mr. Maurice Amsler has a most interesting account of the breeding of a pair of Hermit Thrushes in his aviary and the rearing of a young bird to maturity.

Avicultural Magazine. (Fourth Series) VI, No. 1. January, 1928.

Ducks. By J. Delacour.—With a beautiful plate of the Wood and Mandarin Duck (continued in Feb.).

The Migration of Snowy Owls. By D. Seth Smith. Mainly based on Dr. Gross' article in 'The Auk.'

There are records of a Steppe Eagle (*Aquila nipalensis*) 41 years in captivity and an American Widgeon, 22 years.

The Avicultural Magazine. (Fourth Series) VI, No. 2. February, 1928.

A Blue Variety of the Masked Lovebirds (*Agapornis personata*). By D. Seth Smith.—With a colored plate.

Bird Keeping in Peking. By J. Delacour.—With a number of photographic illustrations.

The Oölogists' Record. VII, No. 4. December 1, 1927.

Some African Rarities. By C. F. Belcher.

An Oölogical Trip to Spain. By W. M. Congreve.

The Black-bellied Storm Petrel Breeding on South Shetlands. By A. G. Bennett.

Variation in Eggs of Common Snipe. By Stanley Lewis.—With photographs of nests and eggs.

A Successful Quest for the Duck Hawk. By T. D. Burleigh.—In Pennsylvania.

The Emu. XXVII, Part 3. January, 1928.

The Elegant and Rock Parrots (*Neophema elegans* and *petrophila*). By A. J. Campbell.—With colored plate.

Proceeding of the Twenty-sixth Annual Congress of the R. A. O. U., Perth, 1927.

The proceedings of the meeting are followed by an account of the Nornalup camp-out and by a number of papers most of which were read at the meeting; viz.

The Educational Value of the Study of Ornithology. By Edwin Ashby.

Some Aspects of Bird Protection. By James Pollard.

Fauna of the Stirling Range. By F. R. Bradshaw.

Peculiarities in the Distribution of Birds in Western Australia. By F. L. Whitlock.

Reactions Between Birds and Plants. By O. H. Sargent.

Birds Observations in Bass Strait. By E. Ashby.

Birds of the Nullarbor Plain. By A. S. Le Souef.

The Ornithology of H. L. White. By A. J. Campbell.

Systema Avium: An Inspiring Ideal. By A. J. Leach.—With an extended review of Mathews' 'Systema Avium Australasianarum.'

The South Australian Ornithologist. IX, Part 4. October, 1927.

Amytornis goyderi, Eyrean Grass-Wren. By J. Sutton.—An historical account of this rare bird of which only two specimens are known.

Numerous other bird notes.

The Gull. IX, Nos. 7 and 8. July and August, 1927.

The Homing Pigeon: Its History and Training. By Robert R. Graham. (July.)

Aasvogels—Scavengers of the Veld. By Dr. F. W. D'Evelyn.

Revue Francaise d'Ornithologie. No. 224. December, 1927. [In French.]

"Ornithomelography." By H. Jouard.—A Notation for Recording bird song.

The Hut of Boismont. By G. Cocu.—Observations on Ducks from a blind for nine seasons.

Some Observations on the Life History of *Accipiter nisus nisus*. By E. Maniquet.

L'Oiseau. VIII, Nos. 6, 7, 8, 9 and 10. June, July, August, September and October, 1927. [In French.]

Geese. By Marquis Tavestock and F. Blauw. (June.)

Observations on the Habits of the Hemipode (*Turnix nigricollis*). By A. Decoux (June.)

A series of papers on Ducks. By J. Delacour. (July to October.)—A colored plate of the Pink-headed Duck by Paret and of several other species by H. Wormald, the latter excellent.

Note on a Mutation of the Pheasant (*P. colchicus*). By M. V. Hachisuka.—This is a melanistic specimen which the author names "*P. c. mut. tenebrosus*." (October.)

The third Expedition to Indo-China. By J. Delacour and P. Jabouille. (October.)

LeGerfaut. 17, Fasc. 111. 1927. Entirely local notes on Belgian birds. [In French.]

Der Ornithologische Beobachter. XXV, Heft 3, 4, and 5. December, 1927 and January and February, 1928. [In German.]

Review of Bengt Berg's "Die letzten Adler" with reproductions of several plates. (December.)

Song of *Riparia riparia*. By H. Stadler. (January.)

An Expedition to the Camargue. By Dr. Kubli. (February.)

Ornis Fennica. IV, Nos. 3 and 4. 1927. [In Scandinavian and German.]

Mainly local notes on Finnish birds. No. 3 contains an account of the breeding of *Tringa nebularia* and No. 4 a list of bird banding records.

Tori. V, No. 24. November, 1927. [In Japanese.]

Swallow Nest on an Electric Light Bulb. (Photograph.)

Notes on a Collection of Birds from Southern Sakhalin. By Y. Yamashina.

The Relation between Sea-birds and Fishes in Toyama Bay. By J. Henmi.

The Discovery of *Sassius simplex*. By M. Hachisuka.

Journal für Ornithologie. LXXVI, Heft 1. January, 1928. [In German.]

The Distribution of the Carrion Crow. By W. Meise.—A lengthy paper which considers the subject from all sides, with abundant maps and discussion. The relation of *Corvus corone* and *C. cornix* occupies most of the article. The common American Crow (*C. brachyrhynchos*) and its allies are considered conspecific with *C. corone* of Europe but the northwest Crow (*C. caurinus*), which the author continues to call the northwest Fish Crow, is regarded as a subspecies of *C. mexicanus* to which the Fish Crow (*C. ossifragus*) is also referred. As a matter of fact as most recent authors agree *caurinus* is merely an extreme form of *brachyrhynchos*.

The Sea Eagle (*H. albicilla*). By H. Siewert.—With excellent photographs.

Border cases between Race and Species. By B. Rensch.

Obituary of Otto Graf Zedlitz.

Ornithologische Monatsberichte. 36, No. 1. January, 1928. [In German.]

Observations on the Breeding Habits of *Lophoceros erythrorhynchus* in the Zoological Garden at Frankfort. By R. Wieschke.

Immense Bird Flight over Helgoland. By R. Drost.

New Races of Birds from the Lesser Sunda Islands. By B. Rensch.—Ten new forms of the genera *Chlorura*, *Munia*, *Corvus*, *Dicrurus*, *Dicaeum*, *Pseudozosterops*, *Zosterops*, *Meliphaga* and *Pachycephala*.

Beiträge für Fortpflanzungsbiologie der Vögel. 4, No. 1. January, 1928. [In German.]

Notes on the breeding habits of various species.

Mitteilungen des Vereins sächsischer Ornithologen. II. Heft. 1. January, 1928. [In German.]

Mainly devoted to local notes on birds of Saxony.

The Explanation of the Concept of Species, Variety, and Subspecies in Ornithology. By E. Stresemann.

Breeding range of *Riparia riparia* in Saxony.

Club van Nederlandsche Vogelkundigen. Jaarbericht. No. 17. January, 1928. [In Dutch.]

Palearctic Migrants in the Dutch East Indies. By F. C. van Heurn.

Immature Plumages of Some East Indian Flycatchers. By F. C. van Heurn.—*Dendrobiastes*.

Ardea. XVI. Af. 2-3. November, 1927. [In Dutch.]

Birds of the Camargue. By T. G. deVries.

Ethology and Psychology of *Phalacrocorax carbo subcormoranus*. By A. F. J. Portielje.

Varia Oölogica. By A. vanPelt Lechner. XV. Green and Blue tinted Eggs of Pigeons.

Food Habits. J. P. Bourma.

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NOTES AND NEWS.

LEVERETT MILLS LOOMIS, a Fellow of the American Ornithologists' Union, died at the Stanford University Hospital, in San Francisco, Calif., Jan. 12, 1928. He was the son of Rev. Samuel and Maria Rebecca (Hamilton) Loomis and was born at Roseville, Ohio, Oct. 13, 1857.

His early work on birds was done in South Carolina where he began to make observations in 1876. Three years later he prepared a paper containing "A Partial List of the Birds of Chester Co., South Carolina," which was published in the 'Bulletin of the Nuttall Ornithological Club' with an introductory note by Dr. T. M. Brewer. His ornithological work in South Carolina continued for about 15 years, and in the meantime, in 1883, he was elected an Associate of the Union at the first meeting and, in 1892, one of the Active Members, now known as 'Fellows.' In 1894, having removed to California, he became Curator of the Department of Ornithology in the California Academy of Sciences in San Francisco, a position which he retained for 18 years. From 1902 until 1912 he was also Director of the Museum of the Academy during the trying period of the San Francisco fire and the re-building of the Academy in Golden Gate Park.

Loomis' chief contributions to ornithology beside his papers on South Carolina birds comprise those on the water birds of California and on the Tubinares. He published a series of five notable papers on the water birds of the California Coast and first called attention to the remarkable migration of sea birds off Monterey Bay. His paper on the birds of the Farallones was largely instrumental in putting an end to the business of gathering Murre's eggs for the San Francisco market, while his discovery of the breeding of two species of Petrels on the Islands effectually stopped traffic in the eggs of the Ashy Petrel collected by the light keepers. His most notable work connected with the Academy consisted in building up two unique collections of beautifully prepared series of water birds, outfitting expeditions to the Galapagos Islands, and securing special legislation exempting the Academy from taxation and authorizing the location of the Museum in Golden Gate Park. He had in manuscript a monograph of the Tubinares which was destroyed in the San Francisco fire, but he largely rewrote it and in 1918 published "A Review of the Albatrosses, Petrels, and Diving Petrels." Just prior to his death he practically completed another extended paper on the Tubinares.

Loomis was unmarried and led a peculiarly quiet and secluded life which accentuated his personal peculiarities, but to those who knew him well and enjoyed his confidence he displayed many admirable traits. He was careful and painstaking in his work, ultra-conservative in his ideas of genera and species, tenacious of his views, and expended a vast amount of care in the preparation of his manuscript. His contributions to orni-

thology and his work in connection with the restoration of the California Academy of Sciences after the fire have earned him an enduring place in the history of California ornithology.

In accordance with an order of the Council a memorial of his life and work, prepared by one of the Fellows of the Union will be presented at the next annual meeting.—T. S. P.

BRADSHAW HALL SWALES, formerly of Detroit and Grosse Isle, Michigan, a member of the American Ornithologists Union, died at his residence in Washington, D. C., on January 23, after a trying illness of over a year. He was born in Detroit, June 30, 1875, and passed the early part of his life there. He was a graduate of the University of Michigan, taking the degree of LL.B. in 1896 and LL.M. in 1897, and in the latter part of the same year was admitted to the Michigan bar and began practice in Detroit.

Mr. Swales was elected an Associate of the American Ornithologists' Union in 1902 and a member in 1909.

On removing permanently to Washington Mr. Swales in 1918 was appointed honorary custodian of the section of birds' eggs in the National Museum, and subsequently in 1921 was made honorary assistant curator of birds. He was greatly interested in foreign birds and contributed many genera and species of rare birds to this museum through the Swales Fund, established for this purpose.

In 1902 he married Mary Rhoda Medbury, of Flint, Michigan, who survives him. He was a founder of the Baird Ornithological Club and its president at the time of his death. The club proposes to publish in the July 'Auk' a more extended memorial of Mr. Swales with portrait.

In addition to ornithology, Mr. Swales was very much interested in anthropology, especially in relation to the American Indian, and also in the early history of the West.—C. W. R.

HARRY BALCH BAILEY, Corresponding Fellow and one of the Founders of the American Ornithologists' Union, died in Buxton Hospital, Newport News, Virginia, at eleven p.m., February 10, 1928, after a brief illness from double pneumonia. He was born in Boston, Massachusetts, February 27, 1853, and at the time of his death was in his 75th year. He graduated from the Boston High School at the age of 15, when through the desire of his mother he entered the wholesale dry goods business. About 1872 he became connected with a shipping firm in Boston. At this time he became interested in ornithology, especially in eggs, and with William Brewster, Ruthven Deane, and others, also watched in the Boston markets for desirable specimens of birds. He was active in the affairs of the Nuttall Ornithological Club at its foundation, and was one of its officers. To the first number of the Bulletin of that organization he contributed an article on the breeding birds of Cobbs Island, based on notes obtained during his honeymoon, and a notice on the covers of the early numbers

stated that subscriptions should be sent to H. B. Bailey at No. 13 Exchange Street, Boston.

In 1875, Mr. Bailey removed to New York, where he was partner in a shipping firm owning some 14 sailing vessels. In 1878, he assisted in the founding of the Linnaean Society of that city. An important contribution of this time was an index and summary of the many notes on birds that had appeared in the first twelve volumes of *Forest and Stream*, which was published in 1881, covering 195 pages, and is an invaluable key to a body of ornithological literature too often overlooked. Though he was one of the founders of the American Ornithologists' Union through financial reverses he was forced to resign in 1891, but was elected a Corresponding Fellow in 1926.

In 1889, he moved to Newport News, Virginia, to a branch of the New York shipping house and there remained established until the time of his death. Through his personal collecting, through friends in the shipping business, and through such army friends as Charles Bendire and Edgar A. Mearns his private museum grew rapidly. On leaving New York his collection, numbering many specimens, went to the American Museum of Natural History. In Virginia with no congenial men interested in birds with whom to associate he turned his attention to entomology, amassing a considerable collection much of which was unfortunately destroyed while in storage awaiting the completion of a new home. Through the coleopterist Dr. E. A. Schwarz, many valuable specimens of insects were presented to the Smithsonian Institution and are preserved in its study series. After the loss of his own insect collection, though he continued to collect insects assiduously, Mr. Bailey turned attention to assisting his son Harold H. Bailey in building up his oological collections and library. From 1908 to 1916 he was interested in studies of the birds of the Alleghanies in Virginia; and for many years was occupied at intervals in work in the field in Florida. As in early life he had visited California and the Dakotas his field experience in ornithology was considerable, and he retained until his death a boyish enthusiasm for all branches of natural history, an interest shared only with the public library in Newport News which he founded and of which he was acting librarian.

His many friends among the ornithologists of the country will mourn his passing and will miss his friendly visits and communications. His death marks the going of another of those instrumental in guarding the early welfare of the American Ornithologists' Union and in shaping its policies during its period of growth. In accordance with custom a memorial dealing fully with the man and his work in ornithology will be prepared and published later.—A. W.

JAMES EDMUND HARTING, a Corresponding Fellow of the American Ornithologists' Union, elected in 1883, died at his home at Weybridge, Surrey, England, Jan. 16, 1928, at the advanced age of nearly 87. He was the eldest son of James Vincent Harting and Alexine Milne Fotheringham,

daughter of Colonel R. H. Fotheringham, R.E., and was born in London, April 29, 1841.¹ His education was received at Downside College and London University. For some time he traveled extensively on the Continent and visited several museums, especially those in Paris and Leyden. Later, in 1893, he accompanied Sir Herbert Maxwell to Thessaly to obtain material for a report on the vole plague. In 1868, he was elected a member of the British Ornithologists' Union, a Fellow of the Linnean Society of London, and began the practice of law, in which however he continued only about 10 years.

Harting's literary career began in 1863 with the publication of his first paper. Six years later he made his first contribution to the 'Field,' on Jan. 1, 1871 became natural history editor, and by December, 1920 had contributed to the paper 2326 articles, including 124 obituary notices. For 50 years he was connected with its staff, and although for the last seven years he practically lived in retirement he retained his connection with the 'Field' until his death. For 20 years, 1877-96, he edited the 'Zoologist' and for many years was Librarian and Assistant Secretary of the Linnean Society.¹

His first book, 'Birds of Middlesex,' appeared in 1866 and was followed from time to time by a number of other special works, including 'Birds of Shakespeare,' 1871; 'White's Natural History of Selborne, 1875-76; 'Ostriches and Ostrich Farming,' 1877; 'British Animals Extinct within Historic Times,' 1880; 'Essays on Sport and Natural History,' 1883; and 'Recreations of a Naturalist,' 1906. He was an authority on British birds and published two 'Handbooks' on the subject, one in 1872 and the other, an enlarged edition, in 1901. He was deeply interested in falconry, in which he was also regarded as an authority. His interest in this subject found expression in a number of publications, including an article in Chambers' 'Encyclopaedia,' a work on 'Hints on the Management of Hawks' in two editions (1884 and 1898), a 'Perfecte Booke for Keepinge Sparhawkes or Goshawkes,' 1886, and 'Bibliographia Accipitraria,' containing a catalogue of 378 titles on falconry, which appeared in 1891.

For many years Harting was a Fellow of the Zoological Society of London. In 1880, he received a silver medal, from the Acclimatization Society of France 'for publications,' and in 1913 a gold medal from the Apothecaries' Society for preparation of a catalogue of the Society's Library. Shortly before his death he presented to the office of the 'Field' his invaluable 'Index Rerum,' including 60 pamphlet boxes of information alphabetically arranged and his books on shooting and game laws, which had formed his private reference library during his years of editorial work. —T. S. P.

LUTHER EVERET WYMAN, an Associate of the American Ornithologists' Union since 1907, for two years President of the Southern Branch of the

¹ In the list of officers of the Linnean Society his name appears as James Edmund Fotheringham Harting.

Cooper Ornithological Club of California, and for the last twelve years Curator of Ornithology in the Museum of History, Science and Art in Los Angeles, died at his home in Los Angeles on January 7, 1928, from pneumonia after a short illness. He was born in Sycamore, Illinois, on September 20, 1870, the second of seven sons of Byron and Nettie (Lowell) Wyman. His love of nature developed early and while in the Sycamore High School he made a collection of mounted birds, which he later gave to the school and to the University of Chicago. He later attended Knox College at Galesburg, Illinois, where he was graduated in 1893.

He was for about fifteen years a Member of the Board of Trade in Chicago, where he succeeded well. He was married in Chicago on July 11, 1899 to Alta Penfield, who survives him. Two children were born of this union, both dying in infancy.

The strain of the responsibilities of his work in Chicago were too great, and he suffered a nervous breakdown, which compelled him to sever his connection with the Chicago Board of Trade. Removing with Mrs. Wyman to Nampa, Idaho, for his health he bought an apple ranch. There they lived for four years, his health steadily improving in the outdoor life and the opportunity for pursuing his studies in Natural History. There he became a member of the U. S. Biological Survey, sending many specimens of birds and mammals to Washington.

Mr. F. S. Daggett, an old Chicago friend had meanwhile removed to Los Angeles, and had been appointed Director of the Museum of History, Science and Art; and here Mr. Wyman was summoned to take charge of the excavation of fossils in the La Brea asphalt pits. This work he performed well and carefully, and the remarkable collection of fossils in the Los Angeles Museum is thus a monument to his ability and conscientiousness.

He was then appointed Curator of Ornithology in the Museum, which position he held at his death. But though ornithology was his official position it was but a small part of his duties. Work in the field of mammalogy and herpetology also fell to his share, and to these in later years photography was added, an art in which he became so proficient that more and more of his time had to be given to it. Of strictly scientific work he did little, as he had little opportunity for it. The 'Field Book of Birds of the Southwestern United States,' prepared with Miss Elizabeth F. Burnell of the Nature Department of the Los Angeles public schools, was his chief work.

To the teachers in the Los Angeles public schools he was a helpful and unfailing guide; to the children that thronged his steps always kind; to the other employees of the Museum always kind and sympathetic; to the Audubon Society of Southern California he was a constant help and inspiration; to the Cooper Club a tower of strength, as Secretary and later President.—L. B. B.

KARL ALBRECHT PEMBER, an Associate of the American Ornithologists' Union since 1921, died Jan. 11, 1928, at Tucson, Arizona, where he was spending the winter in the hope of obtaining relief from asthma. His home was at Woodstock, Vt., where he was born Nov. 9, 1879. He was appointed State Ornithologist of Vermont in April 1923 and during the past five years has been active in furnishing information regarding the birds of the state. He delivered a number of lectures on bird protection and the economic value of birds, and in March 1924 published a 'List of the Birds of Woodstock, Hartland and Vicinity.'

Mr. Pember was much interested in oölogy and particularly in the eggs of the Duck Hawk. In a lecture on 'The Peregrine Falcon in Vermont,' delivered before the Vermont Botanical and Bird Club in January 1926, he explained his interest in this species as follows: "Back in the early nineties I made a collection of birds' eggs and gave to this occupation a bit more than the average fervor usually displayed amongst the boys of that time. . . . But I found that as the years had come along I could not rob a bird's nest as readily as I used to and so narrowed down my oölogical activities to birds of prey. . . . One day in June 1918 I was pottering about with my egg collection when a farmer came in and said that there was a pair of 'Vultures' that lived on a cliff behind his farm and took heavy toll from his poultry and that of his neighbors. As I knew that these couldn't possibly be Vultures in Vermont, birds that nested on a cliff and were big enough to carry off hens were certainly worth while investigating and I called at his farm near Gaysville just as soon as I could. . . . We didn't see the birds that trip but identified them later from the egg taken at that time." Ever since that incident Mr. Pember maintained his interest in the Duck Hawk. He visited at least 15 aeries, brought together a fine series of 25 sets of this species, published a brief article on 'Duck-hawkiana' in 'The Oologist' for May 1923, and at the time of his death had collected much material with the object of publishing a book on this bird.

He is survived by his wife, Mrs. Anna B. Pember, to whom we are indebted for kindly furnishing the foregoing information regarding her husband's ornithological activities. — T. S. P.

DR. A. K. FISHER who became a member of the staff of the U. S. Biological Survey upon its establishment in 1885 has been relieved of the increasingly onerous duties as head of the division of economic investigation in charge of the rodent and predatory animal control operations, which he has so ably managed for many years past, and has been assigned to research work in relation to the economic value of Hawks and Owls.

This is a subject upon which Dr. Fisher is our leading authority and it is gratifying to learn that he is free to return to this work which has always held his interest.

Moreover, just at the present time, these birds are badly in need of competent investigation. Unless their habits have materially changed

since Dr. Fisher made his last report, which we very much doubt, then his advice has been sadly neglected of late and it should be brought back forcefully to the attention of those who are apparently bent upon the extermination of these mainly useful and always attractive species.

We wish Dr. Fisher all success in his return to research work.

THE International Zoological Congress at the meeting at Budapest, September 4-9, 1927 adopted an amendment to Article 25 of the Code of Nomenclature (the Law of Priority) which provides that after December 31, 1930, in order to make a new specific or generic name available an author must accompany it by a description sufficient to distinguish it from other species or genera, or a definite bibliographic reference to such description and in the case of a generic name must clearly designate a type species.

The operation of the rule is postponed until January 1, 1931, so that all systematic writers may become accustomed to it.

The full text of the action may be had from Dr. C. W. Stiles, Public Health Service, Washington, D. C.

DR. E. W. NELSON has published a most interesting resumé of bird banding work in the National Geographic Magazine, for January, 1928, under the title "Bird Banding, the Telltale of Migratory Flight." It is profusely illustrated with half-tone illustrations from photographs showing methods of banding and flocks of wintering water fowl.

WILLIAM HAVELOCK ROBB of Belleville, Ontario, Canada, has published an attractive little book of poems called "The Quill and the Candle. Poems of Birdland in Canada."

The verses are illustrated by reproductions of a number of paintings by Allan Brooks and there are preludes to the poems describing briefly the character or personality of the several species. The publisher is the Ryerson Press, Toronto.

A MOST successful meeting of the Wilson Ornithological Club was held at Nashville, Tenn., December 30-31. Thirty-five papers were read; there was a field trip to Radnor Lake, an informal reception at the home of Mr. A. F. Ganier and the annual dinner of the Club. On January 1, 1928 there was a Field Day at Idlewild Wood on Stones River.

THE annual meeting of the Northeastern Bird Banding Association was held recently at the University Club Boston, Mass. Addresses were made by Harrison F. Lewis, Oliver L. Austin, T. Gilbert Pearson, Ludlow Griscom and John B. May.

Francis B. White was elected President and Charles B. Floyd Secretary-Treasurer.

THE Delaware Valley Ornithological Club held its thirty-eighth annual meeting on January 5, 1928, at the Academy of Natural Sciences, Phila-

delphia. Lantern slides were exhibited by members illustrating field trips of the year. The officers elected for the ensuing year are: President, John D. Carter, Vice President, Samuel C. Palmer, Secretary, J. K. Potter, Treasurer, H. T. Underdown. Philip Livingston was appointed editor of 'Cassinia' and John C. Gillespie in charge of migration investigations.

THE Sixth Annual Meeting of the Baird Ornithological Club, was held at the residence of R. W. Williams, 206 Maple Ave., Takoma Park, Md., on the evening of March 20, 1928.

Officers elected for the ensuing year are: President, Dr. Alexander Wetmore; Vice President, Robert W. Williams; Secretary, Frederick C. Lincoln; Councilors, Dr. C. W. Richmond and Dr. T. S. Palmer.

It is not too early to make plans for attending the annual meeting of the A. O. U. in Charleston, S. C., next autumn. This will be the first meeting to be held south of Washington and we look for a larger attendance of members from the southern states who do not usually come to the annual gatherings on account of the long journey. We trust that all members who have formed the habit of attending will also be present to enjoy the proverbial hospitality of Charleston and take part in what will be one of the most notable of A. O. U. meetings.

READERS of the 'Auk' will be interested to learn that the 'Ten Year Index of The Auk', covering the years 1911 to 1920 is now in press and about one-third of the material is in type. An announcement will be made in the July 'Auk' regarding the appearance of the 'Index' and the terms on which it may be obtained.

The manuscript of the new A. O. U. 'Check List' is also practically completed except for some revision of the ranges of the species, but as it was decided to issue the 'Index' first, arrangements for publishing the 'Check List' cannot be made until the Charleston meeting of the Union next November.

FROM a recently published letter written in 1884 we quote the following: "You may perhaps imagine the state of supreme disgust that I am in at not receiving my copy of the April 'Auk.' I have written you twice about it, and once to Estes & Lauriat, and unless I hear from some one soon about the matter shall come to the conclusion that the publication is like its namesake—defunct." This sounds strangely familiar in the ears of 1928 officers of the A. O. U., having to do with distribution of 'The Auk.' Members of the Union should not take failure to receive a copy of 'The Auk' as a personal insult as there are bound to be casualties from a variety of causes in so large a mailing list as ours. Missing copies will be gladly replaced as soon as notice is received by the Business Manager, 200 Cedar St., Cherrydale, Va.